

# INCONTROL *for z/OS*<sup>®</sup> Upgrade Guide



## Supporting

Version 6.3.07 of CONTROL-D

Version 6.3.07 of CONTROL-D/Image

Version 6.3.07 of CONTROL-D/Page on Demand

Version 6.3.07 of CONTROL-M *for z/OS*

Version 6.3.07 of CONTROL-M/Analyzer

Version 6.3.07 of CONTROL-M/Assist

Version 6.3.07 of CONTROL-M/Links *for z/OS*

Version 6.3.07 of CONTROL-M/Restart

Version 6.3.07 of CONTROL-M/Tape

Version 6.3.07 of CONTROL-O

Version 6.3.07 of CONTROL-V

June 2010



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  - license number and password (trial or permanent)
- operating system and environment information
  - machine type
  - operating system type, version, and service pack or other maintenance level such as PUT or PTF
  - system hardware configuration
  - serial numbers
  - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the issue
- commands and options that you used
- messages received (and the time and date that you received them)
  - product error messages
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# Overview

This guide contains instructions for upgrading to the current release from any of the following INCONTROL versions:

- 6.1.xx
- 6.2.xx

## NOTE



Before proceeding, review [Appendix A, “Technical considerations”](#) and the What’s New section of the INCONTROL for z/OS 6.3.07 Release Notes to determine if upgrading is appropriate for your site.

Note that the following product names and codes are used throughout this guide:

Former Product Name	Current Product Name	Product Code
CONTROL-B	CONTROL-M/Analyzer	CTB
CONTROL-R	CONTROL-M/Restart	CTR
CONTROL-T	CONTROL-M/Tape	CTT

## Restructuring of the Upgrade Guide

As of version 6.2.21, this guide has been restructured. Some of the chapters and appendixes were renamed or relocated within the guide. In addition, the chapter formerly titled “About This Guide,” and an appendix that dealt with adapting the COSMOS table, have been removed entirely.

Information that previously appeared separately in Chapters 1 through 4 has been consolidated into [Chapter 2, “Full Upgrade.”](#)

## Full Upgrade

Prior to version 6.2.21, the Full Upgrade approach was the only means available for you to upgrade your INCONTROL products to the most recent version. During the time you are performing a Full Upgrade, because the IOA core and the INCONTROL products are upgraded as an integrated procedure, none of the individual CONTROL-x products are available for day-to-day operations.

While the Full Upgrade approach remains available, as described in [Chapter 2 on page 17](#), beginning with version 6.2.21 you can perform an Incremental Upgrade process, described in [“Incremental upgrade” on page 14](#).

The Full Upgrade process can be performed when upgrading from version 6.1.xx or later.

## Incremental upgrade

[Chapter 3, “Incremental upgrade,”](#) introduced as of version 6.2.21, enables you to perform most of the preparations for the upgrade offline, without disrupting your production work, and then to upgrade different parts of your environment at different times, instead of upgrading all of your environment at the same time. While performing this gradual transition, you will be working both with the older version and with the newer version, side by side. The Incremental Upgrade can be done to one system (MVS image, or LPAR) while others are still working with the older version, or it can be done to one or more address spaces within a system while other address spaces in that system are still working with the older version. By the end of the Incremental Upgrade process, you will have upgraded all of your systems to work with the new version. In contrast to the concentrated Full Upgrade process, the Incremental Upgrade may span a longer period of time, such as several weeks. This method can help minimize the time that systems are unavailable for day-to-day operations, and it can also help isolate the impact of problems that may be detected during the upgrade, by allowing fallback for specific address spaces or for a specific system, instead of a full fallback for all systems that are part of the environment.

The Incremental Upgrade process to version 6.3.xx can be performed only when upgrading from version 6.2.xx.

## Terms used in this guide

- The terms *CR* and *the current release* are used interchangeably. These terms are intended to mean the version number shown on the front cover of this guide.
- The term CONTROL-x is used as a generic identifier for any one or more INCONTROL products.







# Full Upgrade

This chapter explains how to perform a full upgrade to the current release, including:

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## NOTE



This chapter assumes that you are upgrading from version 6.2.xx to the current release, and the discussions, examples and exhibits herein reflect this assumption.

This chapter assumes that you are installing INCONTROL products according to the customized installation option. If you are using the default installation option, modify the instructions in the current chapter accordingly.

---

Prior to the release of version 6.2.21 the full upgrade process was the only way to migrate data. This process requires a full system shutdown in order to implement, and concludes with your entire system reaching the functionality of the current release as a single entity.

Beginning with version 6.2.21, depending on the version level of your product, the version to which you are upgrading, and the provisions of the following note, BMC Software provides a method of upgrading incrementally, as described in [Chapter 3, “Incremental upgrade.”](#)

# Overview

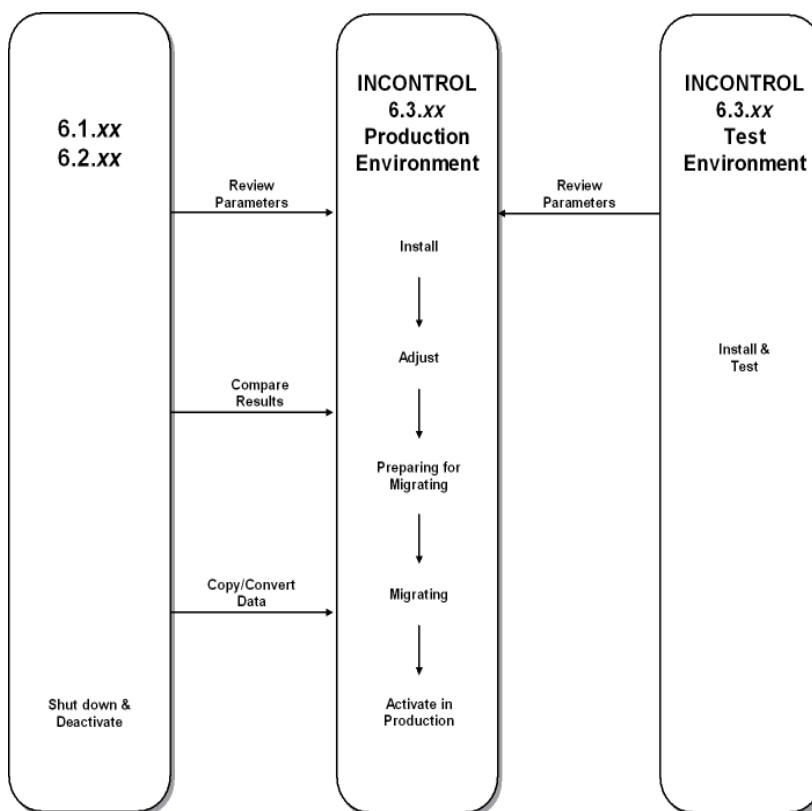
Using the full upgrade process, for INCONTROL products to work together, interact, and share resources, they must all be at the same version number.

The following changes have been made in the IOA structure to simplify installation and upgrading:

- All jobs and working members are now in the **INSTWORK** library. The **INSTCTx** libraries are now base libraries.
- All **PARM** members are in the **IOA.PARM** library.
- The **DEFPARM** member is in the **IOA.PARM** library.
- **IOASPARM** is now **IOASPRM**.
- **IOAXPARM** is now **IOAXPRM**.

Figure 1 provides an illustration of the full upgrade process.

**Figure 1 Full upgrade process**



## Full upgrade steps

The full upgrade process involves the following steps:

1. Follow the instructions in the *INCONTROL for z/OS Installation Guide* to install the current release.
2. Create a second, separate CR system exactly like the first, to use as a test system.
3. Apply the customizations from your previous version to the current release system.
4. Prepare to migrate production from your previous version to the current release system.
5. Migrate production to the current release system.

When you complete the upgrade, you will have three systems:

- the old version
- the current release test version
- the current release new production version

## Installing the current release as a test system

**Table 1** describes the steps you must follow in order to begin the installation of the full upgrade to the current release as a test system. Mark the **Check** column of **Table 1** as you complete each step. Excluding those steps that are optional or not applicable to your site, you should complete these steps in sequence.

**Table 1** Installation checklist (part 1 of 2)

Check	Step and Description
	"Step 1. Prepare a plan" on page 21
	"Step 2. Install the current release as a test system" on page 22
	"Step 3. Install the IOA component" on page 22
	"Step 4. Install CONTROL-M" on page 24
	"Step 5. Install CONTROL-M/Restart" on page 25
	"Step 6. Install CONTROL-D" on page 26
	"Step 7. Install CONTROL-V" on page 27
	"Step 8. Install CONTROL-O" on page 29
	"Step 9. Install CONTROL-M/Analyzer" on page 31

**Table 1      Installation checklist (part 2 of 2)**

Check	Step and Description
	<a href="#">“Step 10. Install CONTROL-M/Tape” on page 32</a>
	<a href="#">“Step 11. Install IOAGATE” on page 33</a>
	<a href="#">“Step 12. Install CONTROL-M Application Server (CTMAS)” on page 33</a>

## Step 1. Prepare a plan

### 1. Prepare batch jobs and CLISTs

Prepare batch jobs and CLISTs to automate as much of the upgrade as possible. Edit, copy, and delete files manually only when you have no choice. This enables you to review and test your jobs and CLISTs before the upgrade, and run them automatically during the upgrade.

Place your batch jobs and CLISTs in a dedicated library.

Examples:

For [“Step 20. Adjust CONTROL-M/Tape” on page 39](#):

Instead of copying files manually, prepare a CLIST that copies definitions from your previous version to the current release CONTROL-M/Tape PARM library.

For [“Step 35. Copy definition libraries” on page 53](#):

Instead of copying libraries manually, make a batch job that copies libraries from your previous version to the current release.

### 2. Plan and schedule the migration

Build your plan around the batch jobs, CLISTs, and site-specific parameter members that make up the bulk of the work.

#### **NOTE**



Keep a record of the customizations that you have made, both during the upgrade and after you have migrated production to the current release.

## Step 2. Install the current release as a test system

1. Review [Appendix A, “Technical considerations,”](#) and the What’s New section of the INCONTROL for z/OS 6.3.07 Release Notes
2. Follow the instructions in the *INCONTROL for z/OS Installation Guide* to install the current release.
3. Clone the installation and create a test system. The IOA and CONTROL-x product repositories should be created to be at least the size of the current production repositories. If not, migration of the data from the old repositories to the new repositories will fail.



### NOTE

When you finish the upgrade, the clone becomes your production system, and the test system is then available for testing maintenance fixes.

## Step 3. Install the IOA component

Install the IOA component, following the instructions in the IOA installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

1. Assign parameter values

Use the INCONTROL Installation and Customization Engine (ICE) to assign values to the current release parameters in [Table 2](#) that are different than the values of the corresponding parameters in the system you are now using. For details, see the DEFARM member in the IOA.PARM library.

**Table 2** IOA parameters

Parameter	Description
%ILPREFA%	Prefix of the Environment INSTALL library and IOA Installation libraries
%OLPREFA%	Prefix of the IOA Operations libraries
%STEPLIB%	IOA LOAD library
%DBPREFA%	Prefix of the IOA Core

2. While you are testing the current release, the names of IOA started tasks such as IOAOMON1 and IOAVMON must differ from the names of the same started tasks in the earlier version.

### 3. Assign a value to the PROCPRFA parameter

Assign a value to be used as the prefix of IOA procedure names. Then adjust the JCL of your production jobs accordingly:

- If you assign a value different than the value in the version you are upgrading from, you must modify the JCL of the production jobs that invoke IOA JCL procedures during the migration.
- If you assign the same value as in the version you are upgrading from, you must have a separate PROCLIB for the testing period, and you must include a JCLLIB statement or /\*JOBPARM statement in all the jobs.



#### **WARNING**

If you assign the same value to the PROCPRFA parameter as in your previous version installation, ensure that all IOA started tasks that were specified in the SYS1.PARMLIB (COMMNDxx) will continue to be invoked from the correct procedure library.

### 4. Assign parameter values in the IOAPARM member

For the QNAME and SSNAME parameters, assign values that are different than the values in your earlier version system. To find the values in the system you are now using, see the IOAPARM member in the IOA.PARM library.



#### **WARNING**

Using an earlier version production IOA QNAME during testing can damage production files.

### 5. Assign parameter values in the IOAXPRM member

If you are installing the IOA Online monitor, assign values to the SUBSYSTEM and VTAM APPLICATION parameters. The values that you assign must be different than the values in your current production system.

### 6. IOA security interface

If the IOA Security interface was installed in the version you are now using, install the new IOA Security interface.

If you are using the IOA Online monitor, grant the IOAOMON user permission to access all data sets used by online users.

### 7. Install maintenance

Install any maintenance that you applied to the test system that you created in substep 2 in [“Step 2. Install the current release as a test system”](#) on page 22.

## Step 4. Install CONTROL-M

If you do not intend to run CONTROL-M at your site, skip this step.

Install CONTROL-M following the instructions in the CONTROL-M installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

### 1. Assign parameter values

Use ICE to assign values to the current release parameters in [Table 3](#) that are different than the values of the corresponding parameters in the system you are now using. For details, see the DEFARM member in the IOA.PARM library.

**Table 3 CONTROL-M parameters**

Parameter	Description
%ILPREFM%	Prefix of the CONTROL-M Installation library
%OLPREFM%	Prefix of the CONTROL-M Operations libraries
%DBPREFM%	Prefix of the CONTROL-M Repository
%STATFILE%	DSName of the CONTROL-M Statistics file

2. While you are testing the current release, the names of CONTROL-M started tasks such as CONTROLM must differ from the names of the same started tasks in the version you are now using.

### 3. Assign a value to the PROCPRFM parameter.

Assign a value to be used as the prefix of CONTROL-M procedure names. Then adjust the JCL of your production jobs accordingly. For details, see the explanation of PROCPRFA in substep 3 of “[Step 3. Install the IOA component](#)” on [page 22](#).

### 4. Assign values in the CTMPARM member

The mapping of certain parameters in CONTROL-M versions earlier than 6.0.00 has been changed to CONTROL-M version CR parameters, as shown in [Table 4](#). For the PROCNAMM parameter, assign a value that is different than the value in the version you are now using. To find the value in the version you are now using, see the CTMPARM member in the IOA.PARM library.

**Table 4 CTMPARM parameters (part 1 of 2)**

Earlier version parameters	Equivalent current release parameters
INTERVL	INTERVLM
NONSWAP	NONSWAPM
PROCNAM	PROCNAMM



**Table 4 CTMPARM parameters (part 2 of 2)**

Earlier version parameters	Equivalent current release parameters
DAYTIME	DAYTIMEM
CKPSIZE	AJFSIZE

## Step 5. Install CONTROL-M/Restart

If you do not intend to run CONTROL-M/Restart at your site, skip this step.

Install CONTROL-M/Restart following the instructions in the CONTROL-M/Restart installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

### 1. Assign parameter values

Use ICE to assign values to the current release parameters in [Table 5](#) that are different than the values of the corresponding parameters in the version you are now using. For details, see the DEFPARM member in the IOA.PARM library.

**Table 5 CONTROL-M/Restart parameters**

Parameter	Description
%ILPREFR%	Prefix of the CONTROL-M/Restart Installation library
%OLPREFR%	Prefix of the CONTROL-M/Restart Operations libraries

### 2. Assign values in the CTRPARM member

For the following parameters, assign values that are different than the values in the version you are now using. To find the values in your current system, see the CTRPARM member in the IOA.PARM library.

- CTRPROC
- AMPREFR

The mapping of certain parameters in CONTROL-M/Restart versions earlier than 6.0.00 has been changed to CONTROL-M/Restart version CR parameters, as shown in [Table 6](#).

**Table 6 CTRPARM parameters (part 1 of 2)**

Earlier version parameters	Equivalent current release parameters
AMBLK#	AMBLK#R
AMBLKSZ	AMBLKSZR

**Table 6 CTRPARM parameters (part 2 of 2)**

Earlier version parameters	Equivalent current release parameters
AMUNIT	AMUNITR
AMVOL	AMVOLR

## Step 6. Install CONTROL-D

If you do not intend to run CONTROL-D at your site, skip this step.

Install CONTROL-D following the instructions in the CONTROL-D installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

### 1. Assign parameter values

Use ICE to assign values to the current release parameters in [Table 7](#) that are different than the values of the corresponding parameters in the version you are now using. For details, see the DEFPARM member in the IOA.PARM library.

**Table 7 CONTROL-D parameters**

Parameter	Description
%ILPREFD%	Prefix of the CONTROL-D Installation library
%OLPREFD%	Prefix of the CONTROL-D Operations libraries
%DBPREFD%	Prefix of the CONTROL-D Repository

### 2. While you are testing the current release, the names of CONTROL-D started tasks, such as CONTROLD, must differ from the names of the same started tasks in the version you are now using.

### 3. Assign a value to the PROCPRFD parameter.

Assign a value to be used as the prefix of CONTROL-D procedure names. Then adjust the JCL of your production jobs accordingly. For details, see the explanation of PROCPRFA in substep 3 of “[Step 3. Install the IOA component](#)” on page 22.

### 4. Assign values in the CTDPARM member

For the following parameters, assign values that are different than the values in the system you are upgrading from. To find the values you are now using, see the CTDPARM member in the IOA.PARM library .

- PROCNAMD
- PRTSTC
- AMNAME (You should leave this parameter blank, so that it defaults to the value of the SSNAME parameter of IOA)
- WRKPREF
- WRKUNIT or WRKVOL
- AMPREF, AMPREFD and JB1PREF

#### 5. Verify the Recipient Tree

Verify that the Recipient Tree is loaded and has no errors. The analysis phase contains new checks, and can reject recipients that were valid in previous versions. Error checking in the online environment is different than error checking in the CONTROL-D monitor, so verify error-free loading for each case separately. BMC Software recommends that you correct all Recipient Tree records that are rejected.

#### 6. Install the CONTROL-D security interface

If the CONTROL-D security interface was installed in the version you are now using, install the new CONTROL-D security interface.

## Step 7. Install CONTROL-V

If you do not intend to run CONTROL-V at your site, skip this step.

Install CONTROL-V following the instructions in the CONTROL-V installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

#### 1. Assign parameter values

Use ICE to assign values to the current release parameter in [Table 8](#) that is different than the value of the corresponding parameter in the version you are now using. For details, see the DEFARM member in the IOA.PARM library.

**Table 8** CONTROL-V parameters

Parameter	Description
%OLPREFV%	Prefix of the CONTROL-V Operations libraries

2. While you are testing the current release, the name of the IOA Archive server started task (IOASMON) must differ from the name of the same started task in the version you are now using.

3. Assign PROCPRFV value

Assign a value to be used as the prefix of CONTROL-V procedure names. Then adjust the JCL of your production jobs accordingly. For details, see the explanation of PROCPRFA in substep 3 of [“Step 3. Install the IOA component” on page 22](#).

4. Assign values in the CTVPARM member

For the following parameters, BMC Software recommends that you assign values that are different than the values in the version you are now using. Assigning different values makes cleanup after testing easier. To find the values in the version you are now using, see the CTVPARM member in the IOA.PARM library.

- IXHPREF and IXPREF
- IXUNIT and IXVOL

5. Assign values in the IOASPRM member

For the following parameters, BMC Software recommends that you assign values that are different than the values in the version you are now using. Assigning different values makes cleanup after testing easier. To find the values in your current system, see the IOASPRM member in the IOA.PARM library.

- DSNPREF (In the “Media Specific Parameters” ICE step)
- SECPREF (During the definition of all media types)

To edit the IOASPRM member, do the following:

- A. Enter the main ICE screen.
- B. Select **Customization**.
- C. Enter **CTV** in the **Product** field.
- D. Select **Product Customization**.
- E. Select major step 2, “Archive Sever Post-Installation.”
- F. Select minor step 2, “Edit Media Parameters and Build IOASPRM.”

## Step 8. Install CONTROL-O

If you do not intend to run CONTROL-O at your site, skip this step.



### NOTE

CONTROL-M/Links for z/OS is a separately licensed product that enables customers to use CONTROL-O functions to assist with CONTROL-M operations. To install CONTROL-M/Links follow the instructions for installing CONTROL-O.

Install CONTROL-O following the instructions in the CONTROL-O installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

#### 1. Assign parameter values

Use ICE to assign values to the current release parameters in [Table 9](#) that are different than the values of the corresponding parameters in the version you are now using. For details, see the DEFPARM member in the IOA.PARM library.

**Table 9** CONTROL-O parameters

Parameter	Description
%ILPREFO%	Prefix of the CONTROL-O Installation library
%OLPREFO%	Prefix of the CONTROL-O Operations libraries

#### 2. While you are testing the current release, names of CONTROL-O started tasks such as CONTROLO must differ from the names of the same started tasks in the version you are now using.

#### 3. Assign PROCPRFO value

Assign a value to the PROCPRFO parameter. This value is the prefix of CONTROL-O procedure names. Then adjust the JCL of your production jobs accordingly. For details, see the explanation of PROCPRFA in substep 3 of [“Step 3. Install the IOA component” on page 22](#).

#### 4. Assign values in the CTOPARM member

For the following parameters, assign values that are different than the values in the version you are now using. To find the values in the version you are now using, see the CTOPARM member in the IOA.PARM library.

- CTOQNAM
- JCMDSSN (only if JCMDSSN = subsystem name is used)

#### 5. Reallocate Automation Log file

If you cannot reallocate the Automation Log because CONTROL-O is running, skip this step; you will be instructed to reallocate in [“Step 45. Migrate CONTROL-O” on page 69](#).

To reallocate the Automation Log file at this time, do the following:

- A. Use the IDCAMS utility to delete or rename both the CLUSTER and the DATA elements of the existing Automation Log files in each computer that is running CONTROL-O.
  - B. Enter the main ICE screen.
  - C. Select **Customization**.
  - D. Select an environment to customize.
  - E. Enter **CTO** in the **Product** field.
  - F. Select **Product Customization**.
  - G. Select major step 2, **“Customize CONTROL-O Dataset Parameters.”**
  - H. Select minor step 6, **“Allocate the Automation Log File.”**
  - I. Submit and execute the job on every system that should run CONTROL-O.
6. If the CONTROL-O security interface was installed in the version you are now using, install the new CONTROL-O security interface.

If you are using CMEM, you should have already installed the CONTROL-O security interface as part of CMEM security interface installation. In this case, you only need to customize security definitions, as described in the *INCONTROL for z/OS Security Guide*.

Save security parameters. When upgrading from an earlier CONTROL-O version when CONTROL-O security is implemented at your site, do the following:

- A. Enter the main ICE screen.
- B. Select **Customization**.
- C. Select an environment to customize.
- D. Enter **CTO** in the **Product** field.
- E. Select **Security Customization**.
- F. Select major step 1, **“Implement CONTROL-O Security.”**

G. Select minor step 3, “Save Security Parameters into Product.”

H. Select CONTROL-O SECURITY.

I. Perform minor steps 2, 3, and 4.

## Step 9. Install CONTROL-M/Analyzer

If you do not intend to run CONTROL-M/Analyzer at your site, skip this step.

Install CONTROL-M/Analyzer following the instructions in the CONTROL-M/Analyzer installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

### NOTE



In the following steps, do not use ICE to allocate the CONTROL-M/Analyzer repository. Instead, migrate the repository in the version you are now using to the current release, as explained in “[Step 46. Migrate CONTROL-M/Analyzer](#)” on page 71.

1. During testing, the CONTROL-M/Analyzer current release procedure names such as CTBNDAY must differ from the corresponding earlier version procedure names.
2. Assign PROCPRFB value

Assign a value to the PROCPRFB parameter. This value is used as the prefix of CONTROL-M/Analyzer procedure names. Then adjust the JCL of your production jobs accordingly. For details, see the explanation of PROCPRFA in substep 3 of “[Step 3. Install the IOA component](#)” on page 22.

3. Install security interface

If the CONTROL-M/Analyzer security interface was installed in the version you are now using, install the new CONTROL-M/Analyzer security interface.

## Step 10. Install CONTROL-M/Tape

If you do not intend to run CONTROL-M/Tape at your site, skip this step.



### NOTE

If you intend to run the CONTROL-M/Tape current release in parallel with a previous version of CONTROL-M/Tape, see [Appendix C, “Running two CONTROL-M/Tapes in parallel.”](#)

Install CONTROL-M/Tape following the instructions in the CONTROL-M/Tape installation chapter of the *INCONTROL for z/OS Installation Guide*.

Observe the following rules:

1. Assign parameter values

Use ICE to assign values to the current release parameters in [Table 10](#) that are different than the values of the corresponding parameters in your current system. For details, see the DEFARM member in the IOA.PARM library.

**Table 10** CONTROL-M/Tape parameters

Parameter	Description
%ILPREFT%	Prefix of the CONTROL-M/Tape Installation library
%OLPREFT%	Prefix of the CONTROL-M/Tape Operations libraries
%DBPREFT%	Prefix of the CONTROL-M/Tape Repository

2. While you are testing the current release, the names of CONTROL-M/Tape started tasks, such as CTTINIT, must differ from the names of the same started tasks in previous CONTROL-M/Tape versions.

3. Assign PROCPRFT value

Assign a value to the PROCPRFT parameter. This value is used as the prefix of CONTROL-M/Tape procedure names. Then adjust the JCL of your production jobs accordingly. For details, see the explanation of PROCPRFA in substep 3 of [“Step 3. Install the IOA component” on page 22.](#)

4. Assign values in the CTTARM member

For the DBPREF and SVCNUM parameters, assign values that are different than the values in the version you are now using. To find the values in the version you are now using, see the CTTARM member.



**NOTE**

The DBPREFT IOA variable and the DBPREF CTTARM parameter must contain the same value.

## Step 11. Install IOAGATE

Install IOAGATE following the instructions in the IOAGATE installation section of the IOA installation chapter of the *INCONTROL for z/OS Installation Guide*. Observe the following rules:

1. While you are testing the current release, the names of IOAGATE started tasks must differ from the names of the same started tasks in the version you are now using.
2. Assign parameter values

For the following parameters, use ICE to assign values that are different than the values of the corresponding parameters in the version you are now using. For details, see the ECAPARM member in the IOA.PARM library.

- APPLIDS
- PORT

## Step 12. Install CONTROL-M Application Server (CTMAS)

If you do not intend to run CTMAS at your site, skip this step.

**NOTE**

Beginning with version 6.1.xx, the name of Enterprise Controlstation (ENTERPRISE/CS) was changed to CONTROL-M/Enterprise Manager.

Before you install CTMAS, the CONTROL-M/Enterprise Manager software must be upgraded to version 6.1.xx or later.

Install CONTROL-M Application Server (CTMAS) following the instructions in the CONTROL-M Application Server installation section of the IOA installation of the *INCONTROL for z/OS Installation Guide*.

# Adjusting installed products

In this section you apply the adjustments you made to the version you are now using, to the current release IOA component and the installed INCONTROL products.

The IOACMPP utility can be used to compare the parameter members of two environments. For details, see the *INCONTROL for z/OS Utilities Guide*.

## NOTE



New features in the current release may eliminate the need for customizations that you made to your current system. Before you make any adjustments, review the enhancements to your products in:

- [Appendix A, “Technical considerations”](#)
- What’s New section of the INCONTROL for z/OS 6.3.07 Release Notes

This section deals with the adjusting your current INCONTROL products to get ready to migrate them to version 6.3.07. It includes the following information:

[Table 11](#) describes the steps you must follow in order to adjust the products and components of the full upgrade to version 6.3.07. Mark the Check column of [Table 11](#) as you complete each step. Excluding those steps that are optional or not applicable to your site, you should complete these steps in sequence.

**Table 11** Adjusting checklist

Check	Step and Description
	<a href="#">“Step 13. Adjust the IOA component” on page 34</a>
	<a href="#">“Step 14. Adjust CONTROL-M” on page 37</a>
	<a href="#">“Step 15. Adjust CONTROL-M/Restart” on page 38</a>
	<a href="#">“Step 16. Adjust CONTROL-D” on page 38</a>
	<a href="#">“Step 17. Adjust CONTROL-V” on page 38</a>
	<a href="#">“Step 18. Adjust CONTROL-O” on page 38</a>
	<a href="#">“Step 19. Adjust CONTROL-M/Analyzer” on page 39</a>
	<a href="#">“Step 20. Adjust CONTROL-M/Tape” on page 39</a>
	<a href="#">“Step 21. Adjust IOAGATE” on page 41</a>
	<a href="#">“Step 22. Adjust CTMAS” on page 41</a>
	<a href="#">“Step 23. Test the installed environment” on page 41</a>

## Step 13. Adjust the IOA component

The topics described in this step refer to IOA and the INCONTROL products installed at your site. Specific adjustments appear in the step for each product.

Apply the adjustments to the version you are now using, to the current release IOA component as follows:

1. Adjust exits and security modules

For information about the exits, see “IOA Exits” in the Exits chapter in the *INCONTROL for z/OS Administrator Guide*. For information about security modules, see the *INCONTROL for z/OS Security Guide*.

2. Adjust security definitions

- Grant permission to production users to access their data sets.
- If the new IOA QNAME differs from that in the previous IOA production environment, modify the security definitions accordingly. For more information about the security entity structure that IOA and INCONTROL products use to validate authorization for each particular function, see the *INCONTROL for z/OS Security Guide*.
- Adjust CLISTs, ISPF panels, ROSCOE RPFs, and procedures.

3. Adjust messages and screens

For information about modifying messages and screens, see the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

4. Adjust Dynamic Destination table

To use the IOA Dynamic Destination table from the version you are now using, enter the “User EXITS Installation” step in the INCONTROL Installation and Customization Engine (ICE).

Choose IOA Customization and select IOADEST.

5. Adjust KSL report programs and utilities

Because of changes to screen layouts in the current release, you may need to adjust locally developed KSL scripts.

6. Adjust profiles

Specify values for profile variables following the Customization procedure in ICE, using profile variable values in your current IOA production system as a reference. Values entered in ICE are stored in the \$PROFMOD member in the IOA.PARM library.

To use the old profile values for a specific user, in the new environment, copy the user profile from the previous environment's IOA.PROF library to the new IOA.PROF library.



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**NOTE**

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BMC Software recommends that you specify profile variables for all relevant INCONTROL products at the same time.

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### 7. Modify libraries

Make modifications to the IOA BANNERS library and to the following CONTROL-D libraries:

- ACIFPARM
- APAPARM
- DJDEPARM
- FTOPARM
- OUTPARMS
- SKL
- TRANSTO

All definitions and libraries created in the version you are now using can be used without change in the current release.

If reports with names between 20 and 50 characters long will be used, the corresponding members in these libraries should be created in accordance with the format described in the *INCONTROL for z/OS Administrator Guide*.

### 8. Special options

- If you are using the IOA Online monitor CICS interface and a CICS version earlier than 3.3, apply Optional Wish WI0787.
- If you are using the IOA Online monitor or the IOA VTAM monitor interface, note the following:
  - The built-in capabilities of a terminal that can be queried determine its color and size attributes. (A terminal that can be queried is one that has a LOGMODE that supports either EXTENDED DATA STREAM or GENERIC in the PSERVIC definition.) For example, a terminal that is able to display color does so even if the terminal is defined as monochrome in the LOGMODE.
  - If you want the terminal to use color and screen size attributes that are not based on its actual capabilities, do one of the following:

- Activate optional Wish WI0310. This forces the IOA VTAM monitor to use the color attributes of the ICOLOR parameter in the terminal's IOA PROFILE for all the terminals that log into the IOA VTAM monitor. Screen size is determined by the terminal's LOGMODE PSERVIC definitions.
- Define a LOGMODE that does not specify EXTENDED DATA STREAM or GENERIC. The terminal's attributes are taken from its LOGMODE PSERVIC definitions.

#### 9. Adjust IOADSNL member

Adjust the IOADSNL member of the current release to reflect any necessary modifications that were specified in the IOADSNL member of the previously installed version. Take special note of DATASET statements with DSN values that refer to the previously installed version, and correct them accordingly.

If you have CONTROL-D installed at your site, and if you are upgrading from version 6.2.xx and you have a DASKL definition in the IOADSNL member that points to operational library *olprefd.SKL* of the previously installed version, remove that definition because the CONTROL-D SKL library is now an installation library (*ilprefd.SKL*).

#### 10. Adjust IOADFLTL member

Adjust the IOADFLTL member of the current release to reflect any WISH options that were specified in the IOADFLTL member of the previously installed version. Identify WISH statements that are now configured via standard parameters, and if you find any, remove them and set the corresponding parameters in the relevant product or component configuration.

## Step 14. Adjust CONTROL-M

The CTMPARM member contains most CONTROL-M defaults. Customize these defaults using ICE Customization for CONTROL-M.

If you are using the CMEM function, the defaults are found in the IOACPRM member and are customized in the “Specify IOA computers” ICE step.

CTMCPU parameters and the CTM2SBS parameter are now defined in the IOACPRM member.

## Step 15. Adjust CONTROL-M/Restart

The CTRPARM member contains all CONTROL-M/Restart defaults. Customize these defaults using ICE Customization for CONTROL-M/Restart.

## Step 16. Adjust CONTROL-D

Apply the modifications to the CTDX001 through CTDX028 exits created in the version you are upgrading from.

Increase the AMFSIZE parameter by approximately 15% or use ICE to reformat the Active Mission file during the upgrade processing.

## Step 17. Adjust CONTROL-V

- Create primary and secondary migration skeletons based on the corresponding MIGLIM and MICLIM members. The names of the new primary skeletons should be identical to the name of the migration missions. The names of the secondary skeletons should be identical to the names specified in the SECONDARY SKELETON parameter of the migration missions.
- Apply the modifications to the CTVX001 and CTDX002 exits created in the version you are upgrading from.

## Step 18. Adjust CONTROL-O

Apply the adjustments to the version of CONTROL-O you are now using, to the current release of CONTROL-O as follows:

- If you rename the CONTROL-O monitor during the testing, ensure that the server-started task has the same 3-character prefix.
- If CONTROL-O/COSMOS is installed or you used the CONTROL-O GLOBAL variable database, review and adjust the parameters of the GLOBAL variable database. In the current release this database is installed during IOA installation.

If you are using a customized version of the COSMOS table, it can be used as is in the current CONTROL-O version. However, to take advantage of the new Sysplex facilities of COSMOS you may need to review your customized rules and adapt them to manage a Sysplex.

- If you are using the CMEM function, the defaults are found in the IOACPRM member and are customized in the “Specify IOA computers” ICE step.

## Step 19. Adjust CONTROL-M/Analyzer

Apply the adjustments you made to the version of CONTROL-M/Analyzer you are now using, to the current release, as follows:

### 1. Adjust exits and security modules

Move locally developed CONTROL-M/Analyzer exits (for example, CONTROL-M/Analyzer DO EXTRACT user processes) in the CTBX010 member to the corresponding CONTROL-M/Analyzer current release IOA LOAD library. Alternatively you can recompile the CTBX010 module in the current release environment.

For information about CONTROL-M/Analyzer exits, see the discussion of CONTROL-M/Analyzer exits in the Exits chapter in the *INCONTROL for z/OS Administrator Guide*. For information about security modules, see the *INCONTROL for z/OS Security Guide*.

### 2. Modify locally developed rules

You may need to modify rules from the version you are upgrading from so that they can work in the CONTROL-M/Analyzer current release.

## Step 20. Adjust CONTROL-M/Tape



### NOTE

If you perform this step because CONTROL-M/Tape does not support the Incremental Upgrade, you must allocate CONTROL-M/Tape repositories that are at least the size of the current production repositories. If not, migration of the data from the old repositories to the new repositories will fail.

### 1. CONTROL-M/Tape security definitions

If the new IOA or CONTROL-M/Tape QNAME differs from that in the current CONTROL-M/Tape production environment, modify the security definitions accordingly.

For information about the security entity structure that INCONTROL products use to validate authorization for each particular function, see the *INCONTROL for z/OS Security Guide*.

2. Copy rule definitions

Copy the rule definitions from the old CONTROL-M/Tape RULES library to the CONTROL-M/Tape current release RULES library.

3. Copy pool definitions

Copy the pool definitions (default member: \$\$POOL) from the old CONTROL-M/Tape PARM library to the CONTROL-M/Tape current release PARM library.

4. Copy vault definitions

Copy the vault definitions (default member: \$\$VAULT) from the old CONTROL-M/Tape PARM library to the CONTROL-M/Tape current release PARM library.

5. Copy Rule List

Copy the rule list member (default member: RULLIST) from the old CONTROL-M/Tape PARM library to the CONTROL-M/Tape current release PARM library. Change the RULES library name in the new RULLIST member to match the current release RULES library name.

6. Adjust Media Database and Stacking Database

In “CTT Customization” in ICE, select the “Upgrade CONTROL-M/Tape Repository” major step, and perform its minor steps.

Select the “Adjustments” major step, and perform the “Building Vault Information in MDB” minor step.

7. Adjust interfaces

Adjust locally developed CONTROL-M/Tape interfaces to automated tape libraries interfaces and other products, such as the External Data Manager interface.

For information about CONTROL-M/Tape interfaces to other products, see the CONTROL-M/Tape chapter in the *INCONTROL for z/OS Administrator Guide*.

8. Operate in parallel

For information about running the CONTROL-M/Tape current release in parallel with a previous version of CONTROL-M/Tape, see [Appendix C, “Running two CONTROL-M/Tapes in parallel.”](#)



## Step 21. Adjust IOAGATE

Apply the IOAGATE adjustments from the version you are now using to the current release IOAGATE by modifying messages. For information about modifying messages, see the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

## Step 22. Adjust CTMAS

If you defined applications to CTMAS using DD statement DAGROUP in the version you are upgrading from, add the same DAGROUP DD statement to the CTMAS the current release procedure.

For information about modifying messages, see the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

## Step 23. Test the installed environment

Test IOA functionality and all your INCONTROL products. Pay special attention to adjustments that you copied from your earlier version.

# Preparing for migrating adjusted products

This section explains how to prepare to migrate your adjusted INCONTROL products to version 6.3.07.

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### **TIP**



Use Customization in the INCONTROL Installation and Customization Engine (ICE) to modify parameters. Customization facilitates data entry, saves the parameters, and rebuilds the formatting jobs.

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To find out in which ICE step a variable is used, you may use the VREF command from any customization panel. For more information about using the VREF command, see the *INCONTROL for z/OS Installation Guide*.

[Table 12](#) describes the steps you must follow in order to prepare your data and software for full upgrade to version 6.3.07. Mark the **Check** column of [Table 12](#) as you complete each step. Excluding those steps that are optional or not applicable to your site, you should complete these steps in sequence.

**Table 12 Migration preparation checklist**

Check	Step and Description
	"Step 24. Prepare IOA" on page 42
	"Step 25. Prepare CONTROL-M" on page 43
	"Step 26. Prepare CONTROL-M/Restart" on page 45
	"Step 27. Prepare CONTROL-D" on page 45
	"Step 28. Prepare CONTROL-V" on page 48
	"Step 29. Prepare CONTROL-O" on page 49
	"Step 30. Prepare CONTROL-M/Analyzer" on page 50
	"Step 31. Prepare CONTROL-M/Tape" on page 50
	"Step 32. Prepare IOAGATE" on page 51
	"Step 33. Prepare CTMAS" on page 51
	"Step 34. Prepare security definitions" on page 51

## Step 24. Prepare IOA

### 1. Change data set parameters

To increase or decrease the size of data sets, change the current release IOA data set parameters. Changing data set parameters affects the allocation and formatting of IOA data sets.

You can change the values of most parameters and customize all formatting jobs in the "Customize IOA Dataset Parameters" major step, under Product Customization for IOA, in ICE Customization. This step lets you

- redo the space calculation for the IOA Log file and the Global Variables files
- specify new parameter values for the Conditions and the Manual Conditions files
- save the parameters in IOAPARM and DEFPARM members—mandatory if values were changed
- rebuild formatting jobs reflecting the new values

For each data set whose size you changed, delete or rename the older version of the data set outside of ICE.

### 2. Modify new installation parameters

Verify that the values of the following IOA parameters in the new installation are suitable for production.

**Table 13 IOA installation parameters**

Parameter	Additional considerations
QNAME	Using the same QNAME as the existing production environment may eliminate some changes to the security definitions.
SSNAME	You can use the same subsystem for different releases but you may need to perform IOASDISC in order to disconnect and then initialize the subsystem in the correct format.

### 3. Save parameters

Save the parameters by performing the “Save Parameters into Installation Libs.” minor step.

### 4. Reformat repository data sets

If you modified the QNAME, reformat all repository data sets.

## Step 25. Prepare CONTROL-M

### 1. Prepare New Day procedure

To prevent the New Day procedure from running twice on the same day (once on the old CONTROL-M version and again on CONTROL-M current release), do one of the following:

- After the New Day Procedure ends, copy the Active Jobs file and the History Jobs file from the previous version to the current release. The method for performing this procedure is described in items [A](#) and [B](#) of “[Migrate the CONTROL-M Repository](#)” on [page 63](#). For example, if the New Day procedure runs at 11:00 A.M. for about 3 minutes, copy the Active Jobs file at 11:15 when you are sure that the New Day procedure has ended.
- Migrate to the current release well before the New Day procedure is scheduled to run so that you complete the migration before the New Day procedure begins.

### 2. Modify data set parameters

If you want to increase or decrease the size of data sets, or change your mirroring option, modify the new CONTROL-M data set parameters. Changes to these parameters affect the allocation and formatting of CONTROL-M data sets.

You can change values by using the “Customize CONTROL-M Dataset Parameters” major step, under Product Customization for CONTROL-M, when in Customization in ICE. This step lets you

- specify new parameter values for CONTROL-M repository
- save the parameters in the CTMPARM and DEFARM members—mandatory if values were changed
- rebuild formatting jobs reflecting the new values

For each data set whose size you changed, delete or rename the older version of the data set outside of ICE before running the formatting job.

### 3. Modify installation parameters

Verify that the values assigned to the following installation parameters in the current release system are suitable for production. You can change values by using the “CTMPARM Post-Installation” major step, under Product Customization for CONTROL-M, in ICE Customization.

**Table 14 CONTROL-M installation parameters**

Parameter	Additional considerations
PROCNAMM	Set this parameter to the New Day procedure name.
DAYTIMEM	

### 4. Save parameters

Save parameters by performing the “Save Parameters into Product Libraries” minor step.

### 5. Modify CMEM parameters

You can increase or decrease the size of the CMEM communication data sets by modifying the new CMEM data set parameters in IOACPRM. Changes to these parameters affect the allocation and formatting of the communication files. Change the values of the parameters using the “Install Event Manager (CMEM)” major step, under Product Customization for CONTROL-M, in ICE Customization.

## Step 26. Prepare CONTROL-M/Restart

### 1. Modify installation parameters

Verify that the values assigned to the following installation parameters in the current release system are suitable for production.

- AMPREFR
- AMUNITR or AMVOLR
- AMBLK#R
- AMBLKSZR

You can change the values by using the “CTRPARM Post-Installation” major step, under Product Customization for CONTROL-M/Restart, in ICE Customization.

### 2. Save parameters

Save parameters by performing the “Save Parameters into Product Libraries” minor step.

### 3. Adjust Restart Control Parameters

Adjust the Restart Control Parameters PARM library to use the new CONTROL-M/Restart current release PARM library. Use ISPF option 3.3 to copy the contents of the PARM library from the version you are upgrading from.

## Step 27. Prepare CONTROL-D

### 1. Prepare New Day procedure

To prevent the New Day procedure from running twice on the same day (once on the old CONTROL-D version and again on CONTROL-D the current release), do one of the following:

- Copy the Active Missions file (AMF or AMB) from the version you are now using to the current release after the New Day Procedure has completed. For example, if the New Day procedure runs at 10:00 A.M for 5 minutes, copy the Active Missions file at 10:15, after enough time has passed to ensure that the 10:00 A.M. run of the New Day procedure has completed.
- Migrate to the current release well before the New Day procedure is scheduled to run so that you complete the migration before the New Day procedure begins.

**NOTE**

Print missions that ran on previous CONTROL-D versions before upgrading cannot be rerun after upgrading. Such missions should be reordered manually in the new version of CONTROL-D.

## 2. Modify data set parameters

Change data set parameter values and customize all formatting jobs in the “Customize CONTROL-D User Files” and “Customize CONTROL-D Dataset Parameters” major steps, under Product Customization for CONTROL-D, in ICE Customization.

These steps let you

- Redo the space calculation for the CONTROL-D user files
- Specify new parameter values for the CONTROL-D repository
- Save the parameters in CTDPARM and DEFARM members—mandatory if values were changed
- Rebuild formatting jobs reflecting the new values

## 3. Change user report file parameters

Recalculate the space of the following IOA Access Method files:

- Active User Report files
- History User Report files
- Permanent User Report files

## 4. Change repository parameters

The following parameters affect the allocation and formatting of the CONTROL-D Repository:

**Table 15 CONTROL-D repository parameters**

Parameter	Additional considerations
AMFSIZE	Number of records in the CONTROL-D Active Missions file.
ATFBLK	Number of blocks in the CONTROL-D/WebAccess Server Active Transmission file.
COMSIZE	The number of entries in the CONTROL-D internal communication file.
AMPREF, AMPREFD, JB1PREF	If you change the values of any of these parameters and you defined a User Catalog, redefine the ALIAS name of the User Catalog.

## 5. Modify installation parameters

Review all the parameters in the CTDPARM member of the new installation. Verify that the values assigned to the parameters are suitable for production. Change the values by using the “CTDPARM Post-Installation” major step, under Product Customization for CONTROL-D, in ICE Customization.

Check the following parameters:

**Table 16 CONTROL-D installation parameters**

Parameter	Additional considerations
AMBLKSZD	Block size to be used when allocating CONTROL-D CDAM sysout data sets.
AMUNITD	Unit for CDAM sysout data sets.
AMVOLD	Volume serial numbers for CONTROL-D CDAM sysout data sets.
AMNAME	If you have production jobs that write directly to CDAM, it is very important to use the CDAM subsystem name of the current production installation. If this parameter has a different value, change it to the production system value. Be sure to place an initialization command in COMMANDxx of SYS1.PARMLIB for the new CONTROL-D subsystem. For more information about this procedure, see the <i>INCONTROL for z/OS Installation Guide</i> .
DAYTIMED	Start time of the CONTROL-D work day. The DAYTIMED parameter specifies to CONTROL-D when a new work day begins.
SMF	Determines whether, and how many, SMF records are to be generated for accounting purposes.
PROCNAME and PRTSTC	Set these parameters to the procedure names of the current release CONTROL-D production environment.

## 6. Delete files

Delete the following files:

- Active User Report files (.ACT\*)
- History User Report files (.HST\*)
- Permanent User Report files (.PRM\*)

Use the CTDUFDEL sample job in the CONTROL-D JCL library or ISPF option 3.4. For example, for the Active User file, use the CTDUFDEL sample job with the %DBPREFD%.ACT prefix to delete all related files.

Alternatively, you can use ISPF option 3.4 to list all files with the %DBPREFD%.ACT\* prefix. The list includes the DATA file and its extents, the INDEX file and its extents, and the DUAL files. Delete all listed files.

## 7. Reformat files

Reformat the files using the jobs in ICE Customization.

## Step 28. Prepare CONTROL-V

1. Change user file parameters

Change CONTROL-V User files parameters by using the “Customize CONTROL-V User Files” major step, under Product Customization for CONTROL-V, in ICE Customization.

2. Recalculate file space

Recalculate the space of the IOA Access Method Migrated Users file and reformat by using the jobs in ICE Customization.

3. Modify installation parameters

Verify that the values assigned to the following installation parameters in the current version installation are suitable for production. Change the values using the “CTVARM Post-Installation” ICE major step, under Product Customization for CONTROL-V, in ICE Customization.

Table 17    **CONTROL-V installation parameters**

Parameter	Additional considerations
IXHPREF, IXPREF	The value of IXHPREF must be different than the values of parameters DSNPREF and SECPREF. For details, see step 28.4.
IXUNIT or IXVOL	IXUNIT is the default unit for index files. IXVOL sets default volume serial numbers for index files.

4. Save parameters

Save parameters by performing the “Save Parameters into Product Libraries” minor step.

5. Modify definition parameters

Modify the new IOA Archive Server Media Definition parameters. Check the following parameters by using the “Edit Media Parameters and Build IOASPRM” minor step of the “Archive Server Post-Installation” major step, under Product Customization for CONTROL-V, in ICE Customization.



**Table 18 IOA archive server media definition parameters**

Parameter	Additional considerations
DSNPREF	This parameter can optionally have the same value that it has in the version you are upgrading from.
SECPREF	The value of SECPREF must be different than IXHPREF and DSNPREF.

## Step 29. Prepare CONTROL-O

### 1. Modify installation parameters

If necessary, modify the CONTROL-O current release installation parameters. Verify that the values assigned to the following parameters in the current release installation are suitable for production. You can change the values by using the “CTOPARM Post-Installation” major step, under Product Customization for CONTROL-O, in ICE Customization.

**Table 19 CONTROL-O installation parameters**

Parameter	Additional considerations
DAYTIMEO	This definition must kept in the active CONTROL-O
EMCSCONS	The definitions of the Extended MCS must not conflict with those of the other active CONTROL-O system. For example you should <ul style="list-style-type: none"> <li>■ ensure that test and production installations on the same MVS image do not use SMFID as the prefix of the consoles' names.</li> <li>■ ensure that in a Sysplex environment no two installations use the IOA subsystem name as the prefix of the consoles' names.</li> </ul>
JCMDSSN	This definition must not conflict with that of the other active CONTROL-O system.
NUMCONS	If EMCSCONS is assigned, this is unnecessary.

### 2. Save parameters

Save parameters by performing the “Save Parameters into Product Libraries” minor step.

### 3. Check blocks

Check the KOATERM blocks in the IOAKPRM member in the IOA.PARM library. Verify that all CPUs defined in the IOACPRM member (in the IOA.PARM library) are also defined for KOA.

## Step 30. Prepare CONTROL-M/Analyzer

### 1. Modify installation parameters

If necessary, modify the CONTROL-M/Analyzer current release installation parameters. Verify that the values assigned to the parameters in the new installation are suitable for production. You can change the values of the parameters by using the “CTBPARM Post-Installation” major step, under Product Customization for CONTROL-M/Analyzer, in ICE Customization.

### 2. Save parameters

Save parameters by performing the “Save Parameters into Product Libraries” minor step.

### 3. Adjust defaults

Adjust the CONTROL-M/Analyzer defaults for production.

## Step 31. Prepare CONTROL-M/Tape

### 1. Change environment

To ensure that local changes to the production CONTROL-M/Tape environment are applied to the CONTROL-M/Tape current release, review [“Step 20. Adjust CONTROL-M/Tape” on page 39](#) and the discussion of [“CONTROL-M/Tape considerations” on page 147](#).

If necessary, make final changes to the CONTROL-M/Tape current release environment.

---

#### **NOTE**



Verify that the following are identical to the corresponding definitions in the production CONTROL-M/Tape system.

- Rule definitions
- Pool definitions
- Vault definitions
- Rule list member definitions

After making any changes in the vault definitions, you must run the CTTVTM utility in SLOTBLD and BOXBLD mode. Execute the utility using the “Building Vault Information in MDB” minor step under the “Adjustments” major step.

---

## 2. Modify installation parameters

You can change the values of CONTROL-M/Tape installation parameters by using the “CTTPARM Post-Installation” major step 1, “Initialization Parameters” minor step 1, under Product Customization for CONTROL-M/Tape, in ICE Customization. Set the value of the MODET installation parameter to PROD, and the value of the PARALLEL parameter to N.

## 3. Save parameters

Save parameters by performing the “Save Parameters into Product Libraries” minor step.

# Step 32. Prepare IOAGATE

If necessary, modify the IOAGATE installation parameters.

Verify that the values assigned to the parameters in the current release installation are suitable for production. You can change values by using the "Configure IOAGATE Parameters" minor step of the "Install IOAGATE" major step, under Product Customization for IOA, in ICE Customization.

# Step 33. Prepare CTMAS

If necessary, modify the CTMAS installation parameters.

Verify that the values assigned to the following parameters in the current release installation are suitable for production. You can change values by using the “Install CONTROL-M Application Server” major step, under Product Customization for IOA, in ICE Customization.

# Step 34. Prepare security definitions

For IOA and all installed INCONTROL products, do the following:

1. Verify that you have granted your production users permissions for their data sets.
2. If the IOA current release QNAME is different than that of the version you are now using, modify security definitions accordingly. For more information about the security entity structure used by INCONTROL products to validate authorization for each particular function, see the *INCONTROL for z/OS Security Guide*.

# Migrating adjusted products

This section explains how to complete the migration of your adjusted INCONTROL products to version 6.3.07.

When you complete the migration of your INCONTROL products to version 6.3.07, you will be ready to run those products with all the features of the new version. Included below are the steps you must follow to complete the migration process. This section deals with the actual migration of your current INCONTROL products to version 6.3.07. It includes the following information:

**Table 20** describes the steps you must follow in migrating the products and components of the full upgrade to version 6.3.07. Mark the **Check** column of **Table 20** as you complete each step. Excluding those steps that are optional or not applicable to your site, you should complete these steps in sequence.

**Table 20 Migrating checklist**

Check	Step and Description
	"Step 35. Copy definition libraries" on page 53
	"Step 36. Back up libraries and repositories" on page 55
	"Step 37. Stop all IOA activities" on page 55
	"Step 38. Disconnect the IOA subsystem" on page 58
	"Step 39. Back up libraries and repositories (again)" on page 59
	"Step 40. Migrate the IOA component" on page 59
	"Step 41. Migrate CONTROL-M" on page 63
	"Step 42. Migrate CONTROL-M/Restart" on page 64
	"Step 43. Migrate CONTROL-D" on page 64
	"Step 44. Migrate CONTROL-V" on page 68
	"Step 45. Migrate CONTROL-O" on page 69
	"Step 46. Migrate CONTROL-M/Analyzer" on page 71
	"Step 47. Migrate CONTROL-M/Tape" on page 77
	"Step 48. Migrate IOAGATE" on page 78
	"Step 49. Migrate CTMAS" on page 79
	"Step 51. Final adjustments" on page 79

## Step 35. Copy definition libraries

### 1. Compatibility considerations

Current release library members, such as scheduling tables, missions, and rule definitions, have different internal formats than those found in earlier versions.

Current release products are backward compatible, meaning they can read definition members written in earlier versions. However, products from earlier versions may not be able to read members that were written in the current release.

When the current release reads a definition member that is in the format of an earlier version, its in-memory representation of the member is converted to the new format. When you exit the screen, you may be prompted to decide whether you want to save the definition member in the current release format, even if you did not modify the member. If you answer “Yes,” the member is saved in the current release format.



#### **WARNING**

The member may then be unusable by your earlier version system.

For CONTROL-M users, there is limited support for ordering and viewing version 6.3.xx scheduling tables in earlier versions.

Because using libraries saved in the current release may make them unusable by earlier versions, copy the old libraries to the current release libraries instead of using earlier version libraries in the current release.



#### **NOTE**

For additional considerations related to copying definition members and libraries, see the instructions for migrating individual INCONTROL products.

### 2. Prohibit changes

Prohibit changes to all IOA and INCONTROL product definition libraries, including those owned by users.

### 3. Back up definition libraries

Back up the following current release definition libraries:

**Table 21 Current release definition libraries**

Product	Definition	Suffix	Comments
IOA	Calendars	CAL	Usually referenced using DD statement DACAL
CONTROL-M	Parameter Prompting	PROMP JCLPROMP	
	Scheduling Tables	SCHEDULE	Also user-defined scheduling tables
	Master Plan	PLANMSTR	
CONTROL-D	Print Missions	PRTMIS	
	Restore Missions	RSTMIS	
	Backup Missions	BKPMIS	
	Report Decollating Missions	REPORTS	Also user-defined report decollating missions
	Banners	BANNERS	An IOA operational library
	Printing Parameters	APAPARM ACIFPARM CCIFPARM DJDEPARM OUTPARMS TRANSTO	
	File Transfer Option Parameters	FTOPARM	
CONTROL-V	Migration Missions	MIGMIS	
CONTROL-O	Rules	RULES	
	CONTROL-O GLOBAL variable pool list	PARM	DAGLBLST member
	CONTROL-O rule table list	PARM	RULELIST member
	COSMOS parameters	PARM	COSMOLST member
	SolveWare	SOLV*	SolveWare was updated. Be sure to reapply local modifications to SolveWare members.
CONTROL-M/ Analyzer	Balance Missions	BALMIS	
	Rules	RULES	
CONTROL-M/ Tape	Rules Definitions	RULES	
	Pool Definitions	PARM	Default member – \$\$POOL
	Vault Definitions	PARM	Default member – \$\$VAULT
	Rule Table List	PARM	Default member – RULLIST

#### 4. Back up user-owned definition libraries

Back up the current release definition libraries that are owned by users.

#### 5. Copy definition libraries

Copy the previous version libraries to the current release libraries by using IEBCOPY or ISPF option 3.3. Use Table 21.



#### NOTE

Edit all rule table list members to change, within the member, the library names to the current release rules library name.

#### 6. Copy user-owned definition libraries

Copy definition libraries that are owned by users in the version you are now using, to the current release.

## Step 36. Back up libraries and repositories

Because libraries saved in the current release are unusable by earlier versions, you must back up the libraries in the version you are now using before you migrate to the current release. If you later decide to fall back to the earlier version, you will need this backup.

Back up all

- libraries, repositories and SMP/E data sets in the version you are now using, including user libraries that contain missions, rules, and schedules.
- current release libraries, repositories, and SMP/E data sets.

## Step 37. Stop all IOA activities

Read all documentation about stopping IOA activities and prepare your migration plan. Depending on your site configuration, you may have to perform an IPL.



#### WARNING

If several INCONTROL products are installed, stop all IOA activities for all products before starting the migrating phase. This is essential because all products share the same database. (For example, all products share the same IOA Conditions file and IOA Log file.)

To stop all IOA activities, do the following:

1. Terminate online sessions

Terminate all IOA Online sessions, such as TSO, ROSCOE, IOA Online monitor, and the IOA VTAM monitor.

2. Stop initiators

If the JCL of production jobs runs an IOA utility or report, stop the JES initiators that handle such jobs during the migrating phase. Similarly, ensure that long-running address spaces and online services do not invoke IOA services.

3. Stop functions

Ensure that functions of CMEM, CDAM, and CONTROL-O are not used during the migrating phase.

- A. Stop JES initiators that handle production jobs that use CDAM files.
- B. Ensure that occasional production jobs whose arrival may be acknowledged by either CMEM or CONTROL-O are not submitted on any CPU on which CMEM or CONTROL-O is active.
- C. Stop JES initiators that handle production jobs that may trigger events in CMEM or CONTROL-O.
- D. Stop started tasks or log off all TSO users that may trigger events in CMEM or CONTROL-O.

4. Stop tasks

Stop all tasks that allocate IOA files either by DD statements or by dynamic allocation.

5. Stop all CONTROL-O activity

- A. For each CONTROL-O or CMEM monitor that is part of your environment, stop the monitor by executing one of the following operator commands, and wait until the monitor address space and its dependent address spaces (CONTROL-O servers) terminate

- `F controlo`
- `STOP`
- `P controlo`

In the commands listed above, *controlo* is the name of the CONTROL-O or CMEM monitor.



- B. Stop the CONTROL-O Application Server by executing the `P CTOAS` operator command and wait for shutdown.

6. Stop all CONTROL-M activity

For each CONTROL-M monitor that is part of your environment, stop the monitor by executing the `P controlm` operator command, and wait until the monitor address space terminates.

In this command, *controlm* is the name of the CONTROL-M monitor. In a CTMPLEX configuration, BMC Software recommends first stopping the Local Sysplex Monitors (LSM) and then stopping the Global Sysplex Monitor (GSM).

7. Stop all CONTROL-D activity

Stop the CONTROL-D monitor that is part of your environment, stop the monitor by executing the `P controld` operator command, and wait until the monitor address space and all of its dependent address spaces (Print Monitors) terminate.

In this command, *controld* is the name of the CONTROL-D monitor.

8. Stop all CONTROL-V activity

Stop IOA Archive Server activities by executing the `F IOASMON, STOP` operator command and wait for shutdown of the server.

9. Stop all CONTROL-M/Analyzer activity

- Do not invoke CONTROL-M/Analyzer batch rules.
- Do not enter CONTROL-M/Analyzer online screens.
- Do not run user application programs that invoke CONTROL-M/Analyzer rules.

If CONTROL-M/Analyzer is running with a CONTROL-M or CONTROL-D monitor, stop the monitor.

10. Stop all CONTROL-M/Tape activity

A. Stop all tape activity.

- B. Take CONTROL-M/Tape down by using the `S CTTINIT, PARM=TERM` operator command and wait for termination of CONTROL-M/Tape.

---

**NOTE**

If you run a previous version of CONTROL-M/Tape parallel to the CONTROL-M/Tape current version, you must shut down both versions.

---



- C. If you are using the optional IOA Functional Monitor, stop the IOA Functional Monitor, IOAFMON.

#### 11. Stop IOAGATE

For each IOA Gateway that is part of your environment, stop the gateway by executing the `P ioagate` operator command, and wait until the gateway address space and all of its dependent address spaces (Application Servers) terminate.

In this command, *ioagate* is the name of the IOA Gateway.

#### 12. Stop ECSGATE

#### 13. Inhibit automatic startup of INCONTROL products during IPL (optional).

Edit the COMMNDxx member in the SYS1.PARMLIB operating system library and remove all commands that start IOA activities.

Any activities that you stop during this step must not be restarted until you have done the following:

- completed “[Step 38. Disconnect the IOA subsystem](#)” through “[Step 40. Migrate the IOA component](#)” on page 59
- performed additional migration steps for the components that are linked to the activities that you stopped (beginning with “[Step 41. Migrate CONTROL-M](#)” on page 63)
- started CONTROL-O or CMEM again, if they are part of your environment

## Step 38. Disconnect the IOA subsystem

If CONTROL-O or CMEM is installed and the subsystem name (the value of the SSNAME parameter) is the same as in your current environment, disconnect the subsystem by executing the `S IOASDISC,SSNAME=ioa_subsystem` command.

---

### **WARNING**



Issue this command *only* after every activity specified in “[Step 37. Stop all IOA activities](#)” on page 55 has ended.

---

The IOA subsystem will automatically connect to the applicable subsystem routines belonging to the new version when the CONTROL-O, CMEM, or CONTROL-D monitors are started with the new environment.

## Step 39. Back up libraries and repositories (again)

Make another backup of the libraries and repositories listed in “[Step 36. Back up libraries and repositories](#)” on page 55.



### NOTE

This backup, made when all INCONTROL products are shut down, is a critical safety measure.

## Step 40. Migrate the IOA component

1. If the IOA LOAD library of the version you are migrating from is in the MVS Linklist, remove it. To remove it permanently, edit the LNKLISTxx member in the SYS1.PARMLIB library and delete the reference to the library.
  - You may need an IPL to make the change effective. However, if you use a product that can dynamically modify the MVS Linklist, such as CA-LOOK, you can skip the IPL.
  - You can decide to add the new IOA LOAD library to the Linklist. If so, refresh the LLA and update the facilities that access the LOAD libraries.
2. If the IOA LOAD library of the version you are migrating from is not in the MVS LINKLIST, verify that it is not being used by any address space in the GRS complex by reviewing the output of the following operator command:

```
D GRS,RES=(SYSDSN,ioa.prev.load)
```

In this command, **ioa.prev.load** is the name of the previous version of the IOA LOAD library. The name will usually have the form of **ilprefa.LOAD**, where **ilprefa** is the IOA Installation prefix of the version you are upgrading from.

The following is a sample output for this command indicating that no address spaces are using that environment:

```
ISG343I 15.40.50 GRS STATUS 678
NO REQUESTORS FOR RESOURCE SYSDSN IOAP.V620.INST.LOAD
```

As an alternative to the D GRS operator command, you can rename the IOA LOAD library of the version you are migrating from, and then rename it back. A successful rename indicates that no one is allocating that library. Note that renaming the library back is necessary, as it may still be used by some of the migration steps described in this chapter.

If any address spaces in the GRS complex are identified as allocating the library, resolve the situation by stopping them.

### 3. Replace IOA procedures

If you used IOA procedures in your jobs, you can use JCLLIB statement or you can copy these procedures to the procedure library at your site.



---

#### **NOTE**

If IOA JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of production jobs to refer to the new IOA JCL procedure names.

---

Rename the started tasks to those of the version you are migrating from.

### 4. Migrate the IOA Core

Rename or delete the current release LOG, LOGI, CND, NRS, NSN, and (optionally) ALTCND files that were used while testing the current release.

To migrate the IOA Core, do the following:

- A. Edit the FORMIOA member in the IOA INSTWORK library. Check that the JCL is correct and submit the job. The job allocates and formats the IOA Core.
- B. If you changed some parameters, you can tailor the FORMIOA job again by using the “Tailor Job” option in the INCONTROL Installation and Customization Engine (ICE) HOUSEKEEPING activity.
- C. Copy the conditions from the IOA Conditions file and Synchronization file in the version you are upgrading from by using the IOACCND sample job in the IOA JCL library. For more information, see the *INCONTROL for z/OS Utilities Guide*.
- D. IOA Log file

If you want to copy the previous IOA Log file to the current release IOA Log file, use the IOACPLOG utility from the new version. Before you copy the file, apply optional Wish WI0357.

**Example**

```
//          JCLLIB ORDER=IOA.PROCLIB
//          INCLUDE MEMBER=IOASETnn
//COPYLOG   EXEC IOACPLOG
//DALOGCUR  DD   DISP=SHR,DSN=previous log file
//DALOG     DD   DISP=SHR,DSN=new log file
//SYSIN     DD   *
            COPYTOLOG
```

**E. Update the IOA Manual Conditions file.****NOTE**

CONTROL-D users must first perform the procedures shown in “[Migrate the CONTROL-D Repository](#), as follows:” on page 65.

CONTROL-M users must first perform the procedures shown in “[Migrate the CONTROL-M Repository](#)” on page 63.

Use the IOALDNRS utility to update the IOA Manual Conditions file with data from your current release system.

**5. Migrate the AutoEdit Variable databases**

If you used the AutoEdit Variable database facility in the version you are migrating from, you must copy your databases to the current release, as described below:

- A. Back up the AutoEdit Variable databases from the version you are migrating from.
- B. Unload the databases to flat files in the version you are migrating from by submitting the IOADBSUL, IOACOLUL, and IOAVARUL jobs from the IOAprefix.JCL library of the earlier version.

This creates three sequential files named IOAprefix.FLAT.DBSD, IOAprefix.FLAT.COLD, and IOAprefix.FLAT.VARD respectively.

- C. Rename the IOAprefix.FLAT.\* files from the version you are migrating from to IOAprefix.FLAT.\* using the IOA prefix of your current release installation.
- D. Format the current version databases using the IOADBSBF, IOACOLBF, and IOAVARBF jobs from the IOAprefix.JCL library of the current version installation.
- E. Load the current version databases using the IOADBSLD, IOACOLLD, and IOAVARLD jobs from the IOAprefix.JCL library of the current version installation.

- F. Build the indexes for the current version databases with the IOADBSBI, IOACOLBI, and IOAVARBI jobs from the IOAprefix.JCL library of the current version installation.
  - G. Start either CONTROL-O or CONTROL-M/Event Manager (CMEM).
  - H. Enter Screen IV from the current version IOA Main Menu, and verify that the databases contain the same data as the version you are migrating from.
  - I. Stop the application that you started in Step G.
6. Migrate INCONTROL security definitions
- For IOA and each INCONTROL product, if necessary, activate the security definitions that you prepared in “[Step 34. Prepare security definitions](#)” on page 51.
7. Put the new IOA Online interface, CLISTs, and panels into effect for all IOA users.

---

**NOTE**



Startup CLISTs have been changed completely in INCONTROL version 6.3.xx. Do not use CLISTs from earlier versions. For more information, see “Entering the IOA Online Facility” in the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

---

8. Migrate CMEM

Adjust the CMEM IOACMEML.

- Ensure that the IOACMEML member in the current release Parameters library references the correct rule definitions in the correct Rules libraries.
- Verify that the CMEM monitor procedure uses the correct names of the IOA GLOBAL database files.

---

**NOTE**



For environments that use CMEM and do not use CONTROL-O, the CTMCMEM monitor can be restarted at this point. After CMEM has been initialized, you can restart any other INCONTROL products as soon as you complete their migration steps.

For environments that do not use either CMEM or CONTROL-O, any other INCONTROL products can be started as soon as you complete their migration steps.

---

## Step 41. Migrate CONTROL-M

### 1. Replace CONTROL-M procedures

If you used CONTROL-M procedures in your jobs, you can use the JCLLIB statement or you can copy these procedures to the procedure library at your site.



#### NOTE

If CONTROL-M JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of the production jobs to refer to the new CONTROL-M JCL procedure names.

In cases where the name of a CONTROL-M procedure does not follow the standard of PROCPREFM (3 characters) and then a suffix such as TROLM or TDAY, the name of the currently used procedure should be changed to another name, and the procedures for version 6.3.xx should be renamed to the customer's selected name.

### 2. Migrate the CONTROL-M Repository

Rename or delete the current release CKP, BKP, journaling files (JNL, RESJNL, CKPJNL, CNDJNL), STATFILE, and optionally, the ALT files that were used while testing.

To reallocate the new CONTROL-M Repository, enter CONTROL-M Customization and select the “Customize CONTROL-M Dataset Parameters” step.

If you have already copied the AJF as part of “[Step 25. Prepare CONTROL-M](#)” on [page 43](#), then skip [A](#) and [B](#) below.

- A. Allocate and format the CONTROL-M Active Jobs file (AJF) and the CONTROL-M History Jobs file (HST).
- B. If the IOA QNAME was changed (as recommended in “[Step 3. Install the IOA component](#)”, Item [4. on page 23](#)), copy the Active Jobs file using the CTMCAJF utility and copy the History Jobs file using the CTMHCOP utility.
- C. Copy or migrate the resources from the Conditions/Resources file of the version you are migrating from into the new CONTROL-M Resources file using the CTMCRES utility. A sample job is found in the CONTROL-M JCL library. For more information on using the CTMCRES utility, see the *INCONTROL for z/OS Utilities Guide*.
- D. Copy (using the IBM IDCAMS utility) the relevant CONTROL-M Job Statistics file from the version you are upgrading from.
- E. Allocate and format the CONTROL-M journaling files.

3. Compress the AJF file

Run the CTMCAJF utility with the “COMPRESS” option to update the pointers on the migrated AJF file.

4. Verify New Day procedure

Ensure that the current release CONTROL-M New Day procedure, CTMTDAY, and any User daily jobs, all reference the same table names that were referenced in the version you are now using, in the appropriate scheduling library.

5. Adjust Date Control Records

Copy all date control records (all members that start with the DATEREC prefix) from the previous CONTROL-M Parameters library to the current release CONTROL-M PARM library.

## Step 42. Migrate CONTROL-M/Restart

Replace the CONTROL-M/Restart procedure.

- Copy the new CONTROL-M/Restart current release procedure to the MVS procedure library, using the production CONTROL-M/Restart procedure name prefix. The new procedure replaces the procedure of the previous version.



### NOTE

If CONTROL-M/Restart JCL procedure prefixes are not the same as prefixes of the previous CONTROL-R version, modify the JCL of the production jobs to refer to the new CONTROL-M/Restart JCL procedure names.

## Step 43. Migrate CONTROL-D

1. Replace CONTROL-D procedures

- A. If you used CONTROL-D procedures in your jobs you can use the JCLLIB statement or you can copy these procedures to the procedure library at your site.
- B. Ensure that the CONTROL-D procedures include all required output DD statements.






---

**NOTE**


---

If CONTROL-D JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of the production jobs to refer to the new CONTROL-D JCL procedure names.

---

- C. Rename the current release started tasks to the names of the started task procedures in the version you are now using.
2. Migrate the CONTROL-D Repository, as follows:
  - A. Delete the CONTROL-D current release AMF, AMB, and ATF files that you used while testing.
  - B. To reallocate the new CONTROL-D Repository, enter the CONTROL-D Customize option and select the “Customize CONTROL-D data set Parameters” step.
  - C. Allocate the CONTROL-D current release Active Missions file.
 

Use the CTDCAMF utility to copy the contents of the old Active Mission file to the current release Active Mission file. Sample JCL for running the utility is in the CTDCAMF member in the CONTROL-D JCL library. Edit the sample, and add the `OLDAMF=<previous AMF dsname>` parameter
  - D. Migrate the previous CONTROL-D Active Transfer file.
    1. Format the Active Transfer file by using the “Format the A.T.F. File” step.
    2. Use the CTDCATF utility to copy the contents of the old Active Transfer file to the current release Active Transfer file. For details, see the sample job in the *INCONTROL for z/OS Utilities Guide*.
3. Migrate CONTROL-D User files.

Run the CTDUFDUL job from the CONTROL-D JCL library in the version you are upgrading from, to back up the Active, Permanent, and History files.

Use the CTDUFRST sample job from the CONTROL-D current release JCL library to restore the files. For each file modify the necessary lines in the job.

4. Adjust the CONTROL-D New Day procedure

The STARTCD member in the CONTROL-D PARM library contains the MVS `START` command to start the CONTROL-D procedure.

5. Adjust Date Control Records

Copy the date control records, DDATEREC and DDATRECU, from the previous CONTROL-D PARM library to the current release CONTROL-D PARM library.

6. Copy the following members, (which contain lists of missions that are ordered by the CTDNDAY procedure) from the previous CONTROL-D PARM library to the current release CONTROL-D PARM library:
  - PRTLST
  - BKPLST
  - RSTLIST
  - REPLIST
  - GENLIST
7. Copy Recipient Tree members from the previous CONTROL-D PARM library to the current release CONTROL-D PARM library. By default, the Recipient Tree member is named CTDTREE.
8. Copy Generic User lists from the previous CONTROL-D PARM library to the current release CONTROL-D PARM library.
9. Ensure that the current release procedure CTDNDAY and any User daily jobs reference
  - the same table names that were referenced in the version you are now using
  - the current release mission definition libraries

---

**NOTE**



For details, see the discussion of member format changes in “[Step 35. Copy definition libraries](#)” on page 53.

---

If you modified the BKPSKL skeleton library in the previous CONTROL-D version, make the same modifications to the CONTROL-D current release SKL skeleton library.

---

**NOTE**



In version 6.3.xx, several members in the skeleton library are changed. Therefore, BMC Software does *not* recommend that you replace members of the INCONTROL version 6.3.xx skeleton library with members from the CONTROL-D library of the version you are upgrading from.

---

10. Use ISPF option 3.3 or the IEBCOPY utility to copy the following production libraries to the current release:
  - ACIFPARM
  - APAPARM
  - BANNERS
  - DJDEPARM
  - FTOPARM
  - OUTPARMS
  - TRANSTO
11. If necessary, adjust the parameters of the following CONTROL-D exits in the SAMPEXIT library:
  - CTDX003
  - CTDX005
  - CTDX014
12. To enable use of the Control-D reports transformation option, use the relevant option of the following:
  - If you used the transformation option in a previous CONTROL-D release, add the following definition to the member IOADSNL in the IOA PARMLibrary, which allows you to continue using the CTD RESLIB library from the previous environment:

```

DATASET DARESLIB,
  SEQ=1,
  DD=DARESLIB,
  DSN=old_PREFD.RESLIB

```

- If you did not previously work with transformers, create a new CTD RESLIB file for resource management, as follows:
  - A. Delete the CTD RESLIB allocated during installation.
  - B. Run CTDFRESL, which allocates the CTD RESLIB.

## Step 44. Migrate CONTROL-V

1. Modify the new CONTROL-V data set parameters
  - A. If you want to change the parameters of the CONTROL-V Migrated User file, choose “Customize CONTROL-V User Files” in ICE Customization.
  - B. Delete or rename the file.
  - C. List all files with the %DBPREFD%.MIG\* prefix. The list includes the DATA file and its extents, the INDEX file and its extents, and the DUAL files. Delete or rename all files in the list.
  - D. Choose the “Format Migrate Users File” ICE minor step to recreate the Migrated user file using the new space parameters.
2. Migrate the CONTROL-V Migrated User file
  - A. Run the CTDUFDUL job from the JCL library of the CONTROL-D version you are upgrading from, to back up the Migrated User files.
  - B. Use the CTDUFRST sample job from the CONTROL-D current release JCL library to restore the files. For each file modify the necessary lines in the job.
3. Replace CONTROL-V procedures

If you used CONTROL-V procedures in your jobs you can use JCLLIB statement or you can copy these procedures to the procedure library at your site.

---

### NOTE



If CONTROL-V JCL procedure prefixes are not the same as prefixes in the previous version, modify the JCL of the production jobs to refer to the new CONTROL-V JCL procedure names.

---

If you modified any current release procedures during testing, modify the procedures in the MVS PROCLIB as well.

4. Adjust DB2 Global Index interface
  - A. Run the CTDGGBPL job to create the DB2 Application plan and authorize it. This job is described in the discussion of the CONTROL-D and CONTROL-V Global Index Facility in the *INCONTROL for z/OS Administrator Guide*.
  - B. Copy the CTDGIDB2 member from the previous CONTROL-D PARM library to the current release CONTROL-D PARM library. Ensure that the DB2 Application plan name specified in CTDGIDB2 is the same as created in step A.

## Step 45. Migrate CONTROL-O



### NOTE

If you rename the CONTROL-O monitor during testing or switch over to production, rename the CTOSERV server procedure in a corresponding manner. For example, if you named the CONTROL-O monitor CONTROL0, name the server procedure CTOSERV. Otherwise, the CONTROL-O monitor and the server procedure will have the same 3-character prefix.

1. If you used CONTROL-O procedures in your jobs you can use JCLLIB statement or you can copy these procedures to the procedure library at your site.



### NOTE

If CONTROL-O is started under the master scheduler rather than under JES, copy the procedures for the CONTROL-O monitor and server into SYS1.PROCLIB or to any library pointed to from MSTJCLxx in use in the SYS1.PARMLIB.

If CONTROL-O JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of the production jobs to refer to the new CONTROL-O JCL procedure names.

2. If you renamed the new CONTROL-O monitor and server procedures during testing, give them their production names.
3. If CONTROL-O/COSMOS is installed, or the Global Variables database is used, verify that the IOA Global Variables files (DD statements DAGRPD/I DAVAMD/I and DAVAAD/I) are allocated.
4. For each system where CONTROL-O is installed, copy the Global Variable members from the earlier version Global Variable library to the current version Global Variable library.

If necessary, use ISPF option 3.3 or the IEBCOPY utility to copy the CONTROL-O Global AutoEdit Variable members from the previous Global Variables libraries.

5. Adjust the CONTROL-O RULELIST.

Ensure that the RULELIST member in the CONTROL-O current version Parameters library references the correct rule definitions in the correct Rules libraries.

If you are using CONTROL-O/COSMOS, add the COSMOS table to the RULELIST member. The COSMOS table is shipped in the CONTROL-O Rules library.

If the CONTROL-O Communications facility is installed, add the CTOGATEI table to the RULELIST member. The CTOGATEI table is shipped in the CONTROL-O Rules library.

If you are using CMEM functions, ensure that the IOACMEML member in the current version Parameters library references the correct rule definitions in the correct Rules libraries.

6. Adjust CONTROL-O DAGLBLST.

Verify that the DAGLBLST member in the CONTROL-O current release Parameters library references the correct GLOBAL variable pools in the CONTROL-O GLOBAL variable libraries and databases.

If you are using CONTROL-O/COSMOS, add the COSMOS databases to the DAGLBLST member.

7. Verify that an Automation Log exists.

If the file has not been allocated because the Automation Log was allocated to an active CONTROL-O monitor during installation, perform the below steps

- A. Use the IDCAMS utility to delete or rename both the CLUSTER and the DATA elements of the existing Automation Log files in each computer that is running CONTROL-O.
  - B. Enter the main ICE screen.
  - C. Select **Customization**.
  - D. Select an environment to customize.
  - E. Enter **CTO** in the **Product** field.
  - F. Select **Product Customization**.
  - G. Select major step 2, “**Customize CONTROL-O Dataset Parameters.**”
  - H. Select minor step 6, “**Allocate the Automation Log File.**”
  - I. Submit and execute the job on every system that should run CONTROL-O.
8. If you have installed CONTROL-O/COSMOS or you intend to use the CONTROL-O GLOBAL variable database, verify that the CONTROL-O monitor procedure uses the correct names of the database files.

---

**NOTE**



The CONTROL-O monitor can be restarted at this point. After CONTROL-O has been initialized, you can restart any other INCONTROL products for which all migration steps have been completed.

---

## Step 46. Migrate CONTROL-M/Analyzer

This step uses examples and procedures that apply when you are upgrading from an earlier supported version to the most recent version. In many of the examples, and elsewhere through the explanation of this step, *Vxxx* is used to identify the supported version you are upgrading from, and *the current release* is used to identify the new version.



### NOTE

Throughout this explanation, the .GRPD file is used for illustration purposes. The procedures illustrated using the .GRPD file must also be applied to all the files in [Table 22](#).

There are two ways to migrate from an earlier version of CONTROL-M/Analyzer:

- You can use existing version production files in the new CONTROL-M/Analyzer environment.
- You can back up your existing version production files and use those backups as the basis of the new CONTROL-M/Analyzer environment, while retaining the original production files in place.

## Using existing production files in the new CONTROL-M/Analyzer environment

The following procedure explains how to use existing production files in the new CONTROL-M/Analyzer environment:

- 1 Prepare all relevant CONTROL-M/Analyzer data sets from supported earlier versions (*Vxxx*), for use in the current release. [Table 22](#) identifies the data sets that must be prepared.

**Table 22 CONTROL-M/Analyzer data sets**

Data set name	Data file name	Index file name
Group	GRPD	GRPI
Model Variables Definition	MODD	MODI
Database Variables Generations	VARD	VARI
Rule Activity	JAFD	JAFI
Report	REPD	REPI
Active Balancing	ABF, ABFBKP	

The files shown in [Table 22](#) can receive different migration treatment, as follows:

- 2** Data files GRPD, MODD, and VARD must be migrated to ensure that the current release database contains the same database records that existed in Vxxx.

- The GRPI, MODI, VARI, JAFI, and REPI index files can be re-indexed locally after the current release has been created, so these files can be omitted from the migration process.

It is not necessary to IEBGENER the index files, nor to back up or follow parts C, D, E, F, G, and H in [step 3](#). Instead, you can use the new Vyyy index files created by the standard current release installation, and then submit the following members from the CTB.V6301.JCL installation library to rebuild those indexes (AFTER the corresponding data components have been adjusted):

— JOBBDBM  
— JOBBDBV  
— JOBBGRP  
— JOBBJAF  
— JOBBREP

This will cause the new index files to have all the necessary data that corresponds to your Vxxx data.

- Log and report files hold history data and ordered missions and rules. If you are not required to migrate these files from Vxxx to the current release, you can omit the JAFD, JAFI, REPD, REPI, ABF, and ABFBKP files from the migration process. If you omit these files from the migration process, the current release will only contain history and ordered missions and rules beginning with the point of migration point.

---

**NOTE**

If any of the files you want to migrate already exist in current release format, delete them before continuing the migration process.

---



- 3** For each file shown in Table 22 that you want to migrate, use the following procedure:

- A** Ensure that you can allocate the file exclusively during the upgrade process. If CONTROL-M or other jobs currently access and use the file you are to upgrade, delay the upgrade process until the file becomes exclusively available to CONTROL-M/Analyzer, such as the time during Initial Program Load (IPL).
- B** Use the IEBGENER utility to create a backup of the current Vxxx.GRPD file by copying the file to a new name.



**NOTE**

The current Vxxx.GRPD file will become the file used by the current release environment. At the end of the upgrade process, the backup file you are now creating will become the .GRPД file of the Vxxx environment.

- C** After you have finished creating the backup copy with a new name, run the IOADBF utility on the Vxxx.GRPД file, using the FUNC=CHANGE and (BYPASS) parameters. Ensure that the rc is 00.

Sample JCLs for substeps C and E (where Vxxx represents the version you are upgrading from) are:

```
//CTB#CE JOB
*//
// JCLLIB ORDER=IOA.Vxxx.PROCLIB
// INCLUDE MEMBER=IOASET
//*****
//* ADJUST QNAME FOR CTB DB FILE
//*****
*//
//CRE001 EXEC IOADBF,FUNC=CHANGE,D=INSTWORK,M=DEFGRPD
//DAFILE DD DISP=SHR,DSN=CTB.Vxxx.GRPД.E000(BYPASS)
*//
//CRE002 EXEC IOADBF,FUNC=CHANGE,D=INSTWORK,M=DEFGRPI
//DAFILE DD DISP=SHR,DSN=CTB.Vxxx.GRPI.E000(BYPASS)
//
```

For more information, see the description of the IOADBF utility in the *INCONTROL for z/OS Utilities Guide*.

**NOTE**

This is a verification step to confirm that the file is accessible to name and qname changes. Because the current release parameters have not yet been supplied, at this point no changes will appear in the file.

- D** Change the DSN parameter in the IOA.Vxxx.INSTWORK (DEFGRPD) library member to reflect the new version CRname of the GRPD file. Do not include the .000 suffix when you change the parameter.
- E** Rerun the IOADBF utility. The internal name is modified, and rc becomes 02 or 00.
- F** Use ISPF option 3.2 to change the name of the original Vxxx.GRPД file to the new version 6301.GRPД filename.

**EXAMPLE**

Rename CTB.Vxxx.GRPД.E000 to CTB.V6301.GRPД.E000.

- G** Change the JCL to run from the current release environment (steplib, procname), and the DAFILE to point to the new 6301.GRPD file.

Sample JCLs for step G (where 6301 represents the version you are upgrading to) are:

```
//CTB#G JOB
*//
// JCLLIB ORDER=IOA.V6301.PROCLIB
// INCLUDE MEMBER=IOASET
//*****
//* ADJUST QNAME FOR CTB DB FILE
//*****
*//
//CRE0001 EXEC IOADBF, FUNC=CHANGE, D=INSTWORK, M=DEFGRPD
//DAFILE DD DISP=SHR, DSN=CTB.V6301.GRPD.E000(BYPASS)
*//
//CRE0002 EXEC IOADBF, FUNC=CHANGE, D=INSTWORK, M=DEFGRPI
//DAFILE DD DISP=SHR, DSN=CTB.V6301.GRPI.E000(BYPASS)
//
```

- H** Rerun the IOADBF utility. The internal qname has been modified to adjust to the current release environment qname.

- I** Rename the backup file created in step 3.B to the original Vxxx.GRPD file name.

- J** Change the DSN parameter in the IOA.Vxxx.INSTWORK (DEFGRPD) library member to reflect the old Vxxx name of the GRPD file. Do not include the .000 suffix when you change the parameter.

- 4** If you used CONTROL-M/Analyzer procedures in your jobs you can use JCLLIB statement or you can copy these procedures to the procedure library at your site.

#### NOTE



If CONTROL-M/Analyzer JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of the production jobs to refer to the new CONTROL-M/Analyzer JCL procedure names.

- 5** Enable users of CONTROL-M/Analyzer to access the Vyyy CONTROL-M/Analyzer online interface, CLISTs, and panels.
- 6** Copy the date control record from the Vxxx CONTROL-M/Analyzer PARM library to the CTBDATE member in the current release CONTROL-M/Analyzer PARM library.
- 7** Copy the list of programs that are run by the New Day procedure.
- 8** Copy the list of programs from the Vxxx CONTROL-M/Analyzer PARM library to the CTBPROGD member in the current release CONTROL-M/Analyzer PARM library.

- 9 Copy the CTBMNDAY member from the Vxxx CONTROL-M/Analyzer BALMIS library to the current release BALMIS library.
- 10 Copy the CTBX010 member in the Vxxx IOA LOAD library to CTBX010 in the current release IOA LOAD library. Alternatively, you can recompile the CTBX010 module in the current release environment.

## Using backups of existing production files in the new CONTROL-M/Analyzer environment

The following procedure explains how to use backups of existing production files in the new CONTROL-M/Analyzer environment:

- 1 Prepare all relevant CONTROL-M/Analyzer data sets from supported earlier versions (Vxxx) for use in the current release. [Table 23](#) identifies the data sets to prepare.

**Table 23 CONTROL-M/Analyzer data sets**

Data set name	Data file name	Index file name
Group	GRPD	GRPI
Model Variables Definition	MODD	MODI
Database Variables Generations	VARD	VARI
Rule Activity	JAFD	JAFI
Report	REPD	REPI
Active Balancing	ABF	ABFBKP

### NOTE



If you are using the dual database option, files with D000 and E000 suffixes (one for each of the dual files you have), must be handled together in order to keep them synchronized. In the following procedure, information regarding the D000 parts of dual files is shown in **bold**. For example, if the current naming for Vxxx is as shown below for the GRP file (and this file is used in this procedure as a continuing example), dual files are identified as follows:

**CTB.Vxxx.GRPD.D000**

CTB.Vxxx.GRPD.E000

- 2 The files shown in Table 23 can be migrated in one of the following ways:

- Create backups (not simple copies) of your current Vxxx environment, to be used in the current release environment.

If you only copy the current file you still need the current release (rather than Vxxx) qnames and file names.



**NOTE**

If you do copy the files, you should set the internal qname and file name using a zap utility, and not a standard editor.

- Use the IOADBF utility in the current release environment to create file names, which enables you to use current release (rather than Vxxx) qnames and file names, instead of manually allocating those names. This procedure, which BMC Software recommends that you use, **will also create, in a single operation, both D000 and E000 files, provided that you specified DUAL=Y in the new IOAP.version 6221.INSTWORK(DEF\*) members.**



**NOTE**

Use the following syntax to create backup copies. The names of the files are set in the DEF\* members and according that IOADBF can create new files for you.

```
//EXEC IOADBF, FUNC=INIT, D=INSTCTB, M=DEFGRPD
```

- 3 Use the following procedure to copy the Vxxx GRP file you just created, to the target Vyyy data sets.

```
//STEP1 EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSUT1 DD DISP=SHR,DSN=CTB.Vxxx.GRPD.D000
//SYSUT2 DD DISP=SHR,DSN=CTB.V6301.GRPD.D000
```

```
//STEP1 EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//SYSUT1 DD DISP=SHR,DSN=CTB.Vxxx.GRPD.E000
//SYSUT2 DD DISP=SHR,DSN=CTB.V6301.GRPD.E000
```

- 4 Adjust the qname and file name in the files.



**NOTE**

Since these are not the original files, you cannot use IOADBF to make the adjustments. Instead of using the CREGRP1 migration step, you should use the AMASZAP or ABDUMPT utility combination, and so on, to zap the data in both new data sets (CTB.V6301.GRPD.E000 and (CTB.V6301.GRPD.D000 in dual mode)) to the qname and file name of your Vyyy environment, as shown in [Table 24](#).

There is no need to adjust the DISK or VOLSER fields.

Table 24 QNAME and file name changes

Field	Offset	Length
QNAME	1C	8
FILENAME	2C	44

- 5 Repeat steps 1 - 4 for the rest of your files.

## Step 47. Migrate CONTROL-M/Tape

1. Replace CONTROL-M/Tape procedures.

If you used CONTROL-M/Tape procedures in your jobs you can use JCLLIB statement or you can copy these procedures to the procedure library at your site.



### NOTE

If CONTROL-M/Tape JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of the production jobs to refer to the new CONTROL-M/Tape JCL procedure names.

2. If the CONTROL-M/Tape Repository file attributes used for the testing phase need to be changed, modify the new CONTROL-M/Tape data set parameters. Changes in these parameters affect the allocation and formatting of CONTROL-M/Tape data sets. You can modify values and customize formatting jobs by using the “Customize CONTROL-M/Tape Datasets” major step in ICE Customization.

Complete the remaining minor steps in ICE. These steps update the file definition statements and the DEFPARM member so that the formatting jobs are customized and ready for submission in later steps.

3. If you are going to use the Media database of your previous CONTROL-M/Tape version, and that database is shared by other systems, ensure that the DBPREFT ICE variable and DBPREF parameter in CTTPARM have the same value as in the previous version.
4. Upgrade Media Database and Stacking Database

In “CTT Customization” in ICE, select the “Upgrade CONTROL-M/Tape Repository” major step, and perform its minor steps.

Select the “Adjustments” major step, and perform the “Building Vault Information in MDB” minor step.

5. Using static installation

While running in TEST mode, you cannot statically install the CONTROL-M/Tape SVC and MVS Tape Label Processing Exits. For more information, and to help you determine whether you want to proceed with a static installation, review the description of ICE minor steps “CONTROL-M/Tape SVC Installation.” and “MVS Tape Label Processing Exits Installation” in the *INCONTROL for z/OS Installation Guide*.

6. Initialize CONTROL-M/Tape.

## Step 48. Migrate IOAGATE

1. Replace IOAGATE procedures.

BMC Software recommends that you give the IOAGATE current release procedures the same names as the IOAGATE JCL procedures in the version you are upgrading from. This may save modifications to JCL of production jobs that invoke IOAGATE JCL procedures.

Back up the current procedures. Then copy the new IOAGATE current release JCL procedures to the MVS procedures library, using the production IOAGATE JCL procedure name prefix. The new procedures replace the procedures of the previous version. Instead of copying the procedures, you can use JCLLIB or /\*JOBPARM.

---

**NOTE**



If IOAGATE JCL procedure prefixes are not the same as prefixes of the previous version, modify the JCL of the production jobs to refer to the new IOAGATE JCL procedure names.

---

2. Rename the application server started task procedures to those of the version you are upgrading from. Then change the corresponding procedure names accordingly. To do so, use the “Configure IOAGATE Parameters” ICE minor step of the “Install IOAGATE” major step, under “The INSTALL activity.”
3. Recycle IOAGATE.

## Step 49. Migrate CTMAS



---

**NOTE**

The CTMAS and CONTROL-M versions must be the same.

---

Migrate to the CONTROL-M current release before you migrate to the CTMAS current release.

## Step 50. Restart IOA activities

Restart any IOA activities that have not yet been restarted, and were stopped in “[Step 37. Stop all IOA activities](#)” on page 55. If CONTROL-O or CMEM are part of your environment, they must be restarted before you restart other activities.

## Step 51. Final adjustments

1. (optional) Add the new the current release IOA LOAD library to the MVS Linklist.

If the IOA LOAD library of the version you are now using was in the MVS Linklist and you want to permanently add the current release library to the list, edit the LNKSTxx member in the SYS1.PARMLIB library, and add the reference to the new release IOA LOAD library.

You may have to IPL to make the change effective. However, if you use a product that can dynamically modify the MVS Linklist, such as CA-LOOK, you can skip the IPL.



---

**NOTE**

If you commented out or removed STEPLIB DD statements from the IOA JCL procedures in the version you are now using, comment out the corresponding statements of the current release IOA JCL procedures. The STEPLIB DD statement is in the SIOAENV member in IOA PROCLIB. However, do not comment out STEPLIB DD statements from the CONTROL-O monitor procedure or the CMEM monitor procedure.

BMC recommends that you comment out statements instead of removing them.

---

2. Modify COMMNDxx members to automatically start the installed products.
3. If subsystem names for the INCONTROL products have changed, modify IEFSSNxx members.

4. If you have products that enhance LLA performance, such as Quick-Fetch or PMO, and you have disabled them during the upgrade, restart them.
5. Migrate CONTROL-M/Server definitions in the CONTROL-M/Enterprise Manager database from the earlier\_version to version 6.3.01 by running the migrate\_dc utility in the CONTROL-M/Enterprise Manager environment. For more information on the migrate\_dc utility, see the *CONTROL-M/Enterprise Manager Migration Guide*.
6. Re-implement previous customizations that were made to screens, exits, and so forth into the new environment.
7. Back up the entire IOA environment, including all new IOA and INCONTROL product libraries repositories, and definition libraries (for example, schedule, mission) owned by users.



# Incremental upgrade

This chapter explains the Incremental Upgrade process, which can be an alternative to the full upgrade process described in [Chapter 2, “Full Upgrade.”](#)

The Incremental Upgrade process can be performed only when upgrading from version 6.2.xx.

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# Overview

Prior to the release of version 6.2.21 the Full Upgrade process was the only way to upgrade your environment. This process requires a full system shutdown in order to implement, and concludes with your entire system reaching the functionality of the current release as a single entity. In the full upgrade process, if there is a problem with any of the upgraded products and associated address spaces, you have to bring back the entire environment to the previous version in order to fix the problem.

Introduced in version 6.2.21, the Incremental Upgrade overcomes these Full Upgrade constraints, allowing you to

- perform the upgrade process in sets of address spaces and products over time and in segments, instead of performing a one-time full system shutdown
- make upgrade preparations in advance, not requiring CONTROL-x products be brought down in a single session
- reduce the time that CONTROL-x products need to be brought down
- upgrade some address spaces without requiring shutdown of other address spaces
- share the IOA core and CONTROL-x repositories between different releases during the upgrade process
- control whether, and when, to use the new features of the current release
- conduct a simple fallback to the previous version of a product or address space during the upgrade period, if necessary

## The Incremental Upgrade process

The Incremental Upgrade process is a set of phases where you

1. During the Preparation Phase, install the new version on a new Production Environment (called the Pilot Environment) that will first run in parallel to your older version Production Environment.
2. Still as part of the Preparation Phase, modify the Pilot Environment to become the Adapted Environment and prepare the older version Production Environment, so that both the Adapted Environment and the older version Production Environment will be able to access the same IOA core and CONTROL-x repositories.

- During the Upgrade/Fallback Phase, incrementally change both the Adapted Environment and the older version Production Environment so that eventually the Adapted Environment will become the new Production Environment, and the older version Production Environment will be retired.

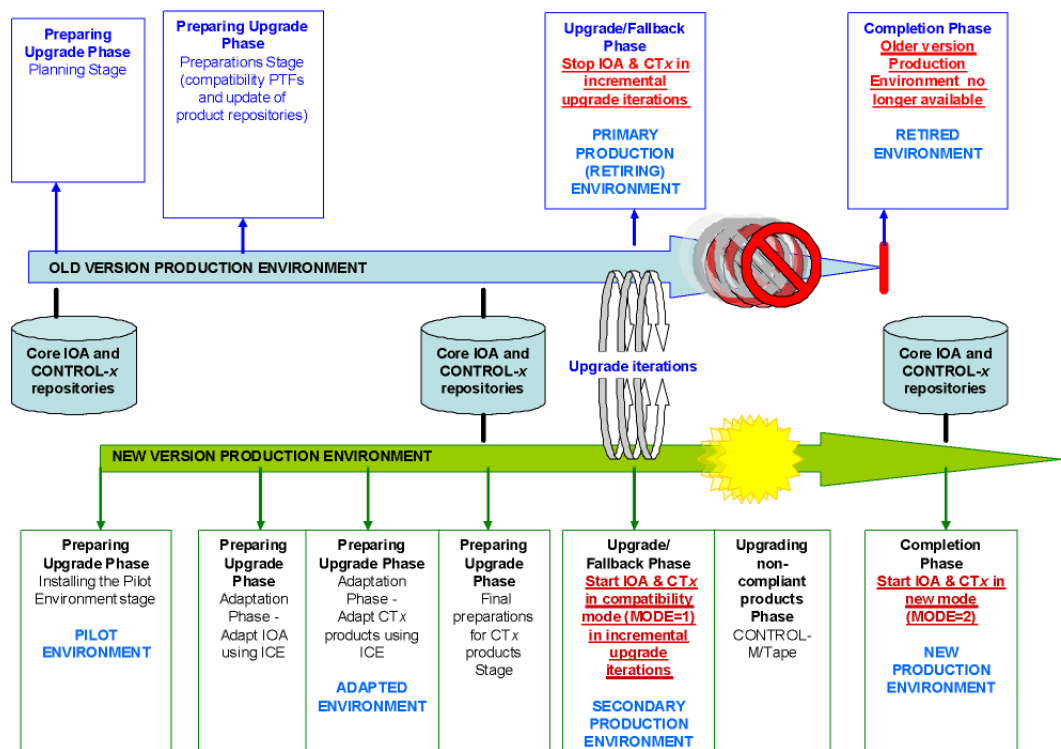
This is done by upgrading groups of address spaces to the new version, one at a time, in a series of upgrade sessions, then upgrading products once all of their associated and dependent address spaces have been upgraded.

During the Upgrade of Non-compliant Products phase, upgrade CONTROL-M/Tape using the Full Upgrade procedure. Currently, CONTROL-M/Tape cannot be upgraded using the Incremental Upgrade. Because of this, there is a separate phase that must be performed that is related to CONTROL-M/Tape issues.

- Final in the Conclusion Phase, once all products have been upgraded, set the compatibility mode of the products of the new version Production Environment to incompatible. This transforms the new version Production Environment to the live Production Environment and the old version Production Environment to the Retired Environment.

Figure 2 illustrates the phases of the Incremental Upgrade. The life cycle of the production environment during the upgrade process is further explained in “The life cycle of a Production Environment” below.

**Figure 2 Upgrade phases**



## The life cycle of a Production Environment

- **Production Environment** - This is the IOA environment that serves the production of your z/OS systems. During the upgrade process, the Production Environment that will be upgraded is called the older version (Primary) Production Environment until it is retired.
- **Pilot Environment** - This is the environment where you install the new version you are upgrading to. It is installed on a separate environment from the older version Production Environment.
- **Adapted Environment** - When the Pilot Environment and older version Production Environment are configured to share the same production files, the Pilot Environment becomes the Adapted Environment.
- **Primary and Secondary Production Environments** - When the products in the Adapted Environment are set in ICE to compatibility mode, it is set to work in parallel with the older version Production Environment. During this stage when there are two production environments, the older version Production Environment is called the Primary Production Environment, and the Adapted Environment is called the Secondary Production Environment.
- **Retiring Environment** - When the Primary and Secondary Production environments run in parallel, the address spaces and products are incrementally upgraded to the new version on the Secondary Production Environment. As the address spaces are upgraded, the Primary Production environment is also referred to as the Retiring Environment.
- **Retired Environment** - When the products in the Secondary Production Environment are set in ICE to incompatibility mode, the Secondary Production Environment will become the new Primary Production Environment, and the older version Primary Production (Retiring) Environment will become the Retired Environment.

## Downtime considerations

Because the different upgrade iterations of the Incremental Upgrade process may require downtime, each iteration should be coordinated with appropriate times in the production day, such as before the start of the working day.

---

### NOTE



Even though some repository or user files can be upgraded during the working day, BMC does not recommend doing this, in order to avoid possible errors with the two versions of these files running simultaneously.

---

## Basic concepts

Each of the INCONTROL products, and the common IOA infrastructure as well, has a compatibility mode set to them in the IOAPARM member of the IOA.PARM library. These modes are also managed from ICE, through the Customization panels.

The names of these compatibility mode parameters are in the form `MODExxx`, where `xxx` denotes the product line (CTM, CTD, IOA, and so on), and the values of these modes correspond to feature sets that were introduced in different versions of the products:

- `MODExxx=1` refers to the basic feature set available for version 6.1.xx
- `MODExxx=2` refers to the basic feature set available for version 6.2.xx
- `MODExxx=3` refers to the basic feature set available for version 6.3.xx

In general, products of a given version can work in their native full feature mode (the mode corresponding to that version according to the list above), but also in a mode that is one version lower than the native mode. This ability to work in a lower mode than the native mode is also called C-1 compatibility, C-1 being one mode lower than the native mode to which you are upgrading (also known as CR). While this means that a given version can work compatibly with an older version, the older version must be exactly one minor version below that of the newer version. For example, version 6.3.xx can work in `MODExxx=3` for any or all of the products (which is its native, full feature mode), but it can also work in `MODExxx=2` for any or all of the products, in order to be compatible with version 6.2.xx.

When installing a fresh environment, the `MODExxx` parameters are automatically set to the native full feature mode of the installed version. However, when performing the Incremental Upgrade process, the Adaptation procedure of ICE sets the compatibility modes of all of the products to match those of the lower version environment. This way, the newly installed environment will function in tandem with the older environment, because it will not use new features that are not compatible with the older version.

For example, when installing version 6.3.xx, all of the `MODExxx` parameters will default to 3, but if the Adaptation process is performed on that environment with a reference environment of version 6.2.xx working in full feature mode (`MODExxx=2` for that version), then all of the values of the `MODExxx` parameters in the newer version will be set to 2. This way, when the newer version starts operating on the shared core files, it will not introduce incompatible contents.

After the transition to the newer version is complete with regards to a given product, `MODExxx` of that product can be set to the highest mode supported by that version, which is the native full feature mode of that version according to the above list. This must be done after the lower version is no longer in use for that product, because

increasing the compatibility mode will cause incompatibility between the newer version and the older version. In addition, note that the MODExxx values can only be increased, and if you change a compatibility mode from a higher value to a lower value, you will risk unexpected results and possible damage to your data.

To summarize, a given version can work on shared core files in a compatible mode if both that version and the other version sharing these files work with the same MODExxx setting for the shared products. The compatibility modes of the older version are not changed during the Incremental Upgrade, but those of the newer version are initially set to the values of the lower version, and then later manually changed (increased) to the full feature values that are native to the newer version. This change is done for a given product when completing the transition to the newer version for that product (and for IOA when completing the transition to the newer version for all of the products).

---

**NOTE**



According to the restrictions explained above, when upgrading to version 6.3.xx, the lower version Production Environment must be of version 6.2.xx, and all of its MODExxx parameters must be set to 2.

---

## Preparing for Incremental Upgrade

In this phase you will install a new environment with the newer version, called the Pilot Environment. You will then modify this environment using the Adaptation process, and also prepare your existing older version Production Environment so that both environments will become functionally equivalent and compatible with each another. The two environments will be configured to be different runtime environments with different versions, but sharing the same production files.

When you complete this phase and move on to the Upgrade/Fallback phase, you will be able to work both with your older version Production Environment and the newer version Secondary Production Environment side-by-side.

The IOACMPP utility can be used to compare the parameter members of two environments. For details, see the *INCONTROL for z/OS Utilities Guide*.

---

**NOTE**



All of the products in the older version Production Environment must be running in full-feature mode (MODExxx=2). MODExxx=1 is not supported for Incremental Upgrades in version 6.3.01.

---

## Planning

Perform the following steps to prepare for the Incremental Upgrade and enable fallback in case problems arise during the upgrade:

- 1 Review release notes and check for online updates.
  - A Review the INCONTROL release notes for the version you are upgrading to. Ensure that the version of this *Upgrade Guide* is the same as the version you are upgrading to.
  - B Refer to the z/OS Product Compatibility Database which is part of the Support section of the BMC Software internet site ([http://www.bmc.com/support/hou\\_ZOS](http://www.bmc.com/support/hou_ZOS)), and check for Maintenance Notes for this release and for your system according to your installed products. These notes may include additional instructions relevant to the Incremental Upgrade which do not appear in this manual.

---

### NOTE



Other than the requirements that may appear in the z/OS Product Compatibility Database, you can perform an Incremental Upgrade on any 6.2.xx version to version 6.3.01.

---

## Installing the Pilot Environment

### Installation

Install the new version Pilot Environment with the required INCONTROL products as described in the *INCONTROL for z/OS Installation Guide*. The Pilot Environment will later become the secondary production runtime environment for the core repositories that are currently managed by your existing Production Environment. The Adaptation stage will modify the Pilot Environment so that it will point to the repositories of the Production Environment.

---

### NOTE



If you already have an installed environment with the newer version, and you want to transform it to become your Secondary Production Environment, review the following considerations to determine if they apply to the installed environment.

If your installed environment was not installed with the required Reference Libraries Prefix, you can change it at the beginning of the Adaptation stage.

---

Before you begin the installation, review the following considerations:

- Install the Pilot Environment in parallel to the existing Production Environment you intend to upgrade.

These two environments are separate from one another during the Pilot Environment stage. After the Pilot Environment goes through the Adaptation stage, it will then become the Secondary Production Environment working with the same production files as the existing Production Environment.

The data sets of the Pilot Environment must be accessible from all systems that require access to the existing Production Environment. During the Adaptation stage, ICE will need access to both the original Production runtime environment and the secondary Production runtime environment.

During installation, ensure that the Pilot Environment has its own installation libraries prefixes, operational libraries prefixes, and database files prefixes. Also ensure that the environment has its own QNAMEs.

- Consider the following data set naming convention recommendation:

Include an identification of the newer version in the installation libraries prefixes that you define as part of the installation. For example, for the ILPREFA prefix, use a convention such as IOAP.V630.INST instead of IOAP.INST. This applies specifically to the Incremental Upgrade process because you will have two sets of production data sets operating in parallel, and therefore a term such as IOAP to describe the Production Environment is not distinctive enough.

- Consider the following recommendations when working with STC and procedure names, and STC and procedure libraries:

Choose distinct prefixes for the STC and procedure names for the Pilot Environment. This allows you to copy the STCs and procedures to your site's system libraries without conflicting with existing system libraries. When you complete the Pilot Environment stage, you will be able to assign alternate prefixes to these STCs and procedures. When you later change these prefixes, you should delete any obsolete STCs and procedures that were used only during the Pilot Environment stage.

- Make sure that you install the same set of products as in your existing Production Environment.



- If you have been using any user exits, security exits, or the Dynamic Destination Table in your existing Production Environment, make sure that you install the same elements in your Pilot Environment.

If you have been using modified versions of any sample exits, review the modifications for each of those exits, and adjust the corresponding sample exits in the newer version before installing them in your pilot environment.

For information about exits, see the Exits chapter in the *INCONTROL for z/OS Administrator Guide*. For information about security modules, see the *INCONTROL for z/OS Security Guide*.

- Other issues:
  - Specify the Installation Libraries Prefix (ILPREFA) of the existing Production Environment as the Reference Libraries Prefix of the Pilot Environment.
  - Note that the INSTID parameter that you specify during the installation will be the final INSTID of your upgraded environment.

## Sanity checks and basic testing

Ensure that any testing on the Pilot Environment does not affect the existing Production Environment.

Test the Pilot Environment to see that it functions correctly. When you proceed to the Adaptation stage you will not be able to continue these tests, as this environment will then point to the real production core files.

If you are now upgrading your actual Production Environment, your tests should be limited to basic infrastructure and functionality and not to conducting an extensive set of feature tests. In this case, it is assumed that you have already conducted extensive tests on a test environment.

When you are finished testing the Pilot Environment, BMC recommends that you rename the IOALOG file of the Pilot Environment to verify that it is not being used.

## Preparations in your Production Environment

This stage describes preparations that are done in the Production Environment before the Adaptation stage. These preparations will possibly require scheduled maintenance time.

- 1 If required by the z/OS Product Compatibility Database, install compatibility/toleration PTFs on your active older version Production Environment.

Install on your Production Environment any missing compatibility/toleration PTFs that you identified in “Planning” on page 87. The PTFs should be applied with their corresponding considerations, as described within the PTFs themselves.

## 2 Product-specific activities

- Relocating sample rule table references from user rule list members.

This applies only to installations of CONTROL-M with CMEM, or installations of CONTROL-O.

Review the IOACMEML and any other similar rule list members in your IOA.PARM library of the older version Production Environment. For the Incremental Upgrade process to function correctly, you need to verify that these members only reference user rule tables, and that they do not reference the sample IOACMEMR rule table in the IOAENV installation library.

If the sample rule table appears in one or more of the rule lists, do the following:

1. Back up the IOACMEML member, or any other CMEM rule list member, of the *ilprefa*.PARM library of the older version Production Environment.
2. If the IOACMEMR sample rule table is the only table listed in one or more of those rule list members, copy the IOACMEMR sample rule table from the IOAENV library to a user library of the older version Production Environment.
3. Edit the IOACMEML member in your *ilprefa*.PARM library of the older version Production Environment, and either remove the reference to the sample rule table, or in the case that it is the only table listed in the member, modify the reference to match the copy of the table in the user library.
4. When you have completed the edit, issue the following operator command to have CONTROL-M CMEM process the new rule table list by reloading the rule tables that are specified in them:

```
F CTMCMEM,C=ALL,REBUILD
```

If you have changed additional user rule lists other than the current one (identified by the ORDER= parameter of the CONTROL-M CMEM monitor), be sure that you reviewed these changes carefully, as they will not be tested until the next time that you start the monitor with a different ORDER= specification.

- Removing system rule table references from user rule list members.

This applies only to installations of CONTROL-O.

Review the RULELIST, IPLRULES and any other similar rule list members in your *olprefa*.PARM library of the older version Production Environment. For the Incremental Upgrade process to function correctly, you need to verify that these members only reference user rule tables, and that they do not reference system rule tables which are part of CONTROL-O or of the IOA infrastructure. All references to system rule tables should be placed instead in the IOARULES rule list member in your *ilprefa*.PARM library. The Adapted Environment will have its own IOARULES system rule list, but it will still reference the user rule lists in the *olprefa*.PARM library of the existing Production Environment.

The CONTROL-O system rule tables are CTOGATEI, which resides in the *olprefa*.RULES library, and \$COSMOSO, which resides in the *ilprefa*.IOAENV library. The IOA system rule table is IOAVRULE, which resides in the *ilprefa*.IOAENV library.

If one or more such system tables appear in one or more of the rule lists, do the following:

1. Back up the IOARULES member of the *ilprefa*.PARM library and all of your user rule list members of the *olprefa*.PARM library.
2. Edit the IOARULES member in your *ilprefa*.PARM library of the older version Production Environment, and add the identified system rule table names to this list. Each such system rule table name should appear just once in the IOARULES member.
3. Edit the user rule list members in your *olprefa*.PARM library, and remove the lines that you added to the IOARULES member.
4. When you have completed the edit, issue the following operator command to have CONTROL-O process the new rule table list by reloading the rule tables that are specified in them:

```
F CONTROL-O=ALL,REBUILD
```

If you have changed additional user rule lists other than the current one (identified by the ORDER= parameter of the CONTROL-O monitor), be sure that you reviewed these changes carefully, as they will not be tested until the next time that you start the monitor with a different ORDER= specification.

## EXAMPLE

---

### IOARULES before the change:

```
***** Top of Data *****
/* CARDS WITH /* IN COLUMN 1 ARE COMMENT CARDS
/*
/* CARDS IN THIS MEMBER ARE CREATED USING THE FOLLOWING LAYOUT
/*
/* * LIBNAME MEMNAME
/*
/* IOA AND CONTROL-O SYSTEM RULES THAT MUST BE LOADED
/*
/* NOTE:
/* THE IOAVRULE TABLE MUST BE LOADED. ELSE IOA VARIABLES WILL
/* NO FUNCTION.
/*
* IOAP.V610.IOAENV   IOAVRULE
/*
/* INSERT USER TABLES AFTER THIS LINE
/*
***** Bottom of Data *****
```

### IOARULES after the change:

```
***** Top of Data *****
/* CARDS WITH /* IN COLUMN 1 ARE COMMENT CARDS
/*
/* CARDS IN THIS MEMBER ARE CREATED USING THE FOLLOWING LAYOUT
/*
/* * LIBNAME MEMNAME
/*
/* IOA AND CONTROL-O SYSTEM RULES THAT MUST BE LOADED
/*
/* NOTE:
/* THE IOAVRULE TABLE MUST BE LOADED. ELSE IOA VARIABLES WILL
/* NO FUNCTION.
/*
* IOAP.V610.IOAENV   IOAVRULE
* CTOP.V610.RULES    CTOGATEI
* IOAP.V610.IOAENV   $COSMOSO
/*
/* INSERT USER TABLES AFTER THIS LINE
/*
***** Bottom of Data *****
```

---

- Updating your current production CTOGATEI rule table to be that of the newer version.

This applies only to installations of CONTROL-O.

1. Back up the CTOGATEI rule table inside *olpref0.RULES* of your older version Production Environment (which is going to remain the *olpref0.RULES* also after the Incremental Upgrade is complete).
2. Copy the newer version of the CTOGATEI from the *olpref0.RULES* of the Pilot Environment into *olpref0.RULES* of your Production Environment, replacing the table that you have just backed up. This rule table is compatible both for the older version and the newer version.
3. Refresh the copy of the table either by

Issuing the following command:

```
F CONTROL0,0=olpref0.RULES(CTOGATEI)
```

or ordering the CTOGATEI table through the IOA online screens

Make sure that you select the same rule table library that is used by the Production Environment. Otherwise, a duplicate copy of the table will be loaded.

## Adapting your Pilot Environment

During this stage you will transform your newly installed Pilot Environment into an Adapted Environment. Through this transformation, the following will occur:

- The core files that were installed together with the Pilot Environment will be lost, and the Adapted Environment will instead be attached to the core files of the Production Environment.

From this point, the merger of the newer version runtime environment with your existing core productions files will be called the Adapted Environment.

- The QNAMEs of the Adapted Environment will be set to those of your original Production Environment, which will enable the Adapted Environment to synchronize with the original Production Environment once it becomes the Secondary Production Environment.

- Various parameters and configuration definitions will be imported from the original Production Environment and merged into the Adapted Environment in order to make both runtime environments functionally compatible. However, the installation libraries of the Pilot Environment and some of the parameters will remain the same in the Adapted Environment.

---

#### **NOTE**



The Pilot Environment will be transformed into the Adapted Environment through the Adaptation process. Therefore, no further testing or health-checks should be done on the environment once you start the Adaptation process, since any operation will affect production files.

---

## Overview of the Adaptation Procedures

When the Adaptation stage is complete, the Adaptation Environment will be ready to become an alternative runtime environment for your production, also referred to as the Secondary Production Environment. Both the existing older version Production Environment and the newer version Adapted Environment will point to the same production files, and will be coordinated to work in parallel.

The Adaptation process consists of the Initial Adaptation stage, where the environment is transformed to an Adapted Environment, and the Production Adaptation stage, where product-specific adaptations are performed on the Adapted Environment.

All of the Adaptation procedures are performed using set steps in ICE, and are described in “[Initial Adaptation \(for all INCONTROL products\)](#)” on page 100 and “[Product Adaptations \(for specific INCONTROL products\)](#)” on page 108.

---

#### **NOTE**



You must only perform the Adaptation using the ICE of the newly installed Pilot Environment. It is from these Adaptation steps performed on the Pilot Environment that you will establish the link between the Pilot Environment and the existing Production Environment, by specifying it as a Reference environment.

---

## Notes on using the Adaptation screens

The procedures in the “[Initial Adaptation \(for all INCONTROL products\)](#)” on page 100, and “[Product Adaptations \(for specific INCONTROL products\)](#)” on page 108 explain, step-by-step, how to enter and navigate through the ICE Adaptation screens. The following are some general principles on how to use these screens:

- You must perform the Initial Adaptation first before continuing with the Adaptation of the individual product groups.

- The Production Adaptations are grouped by the following product groups:

- CONTROL-M and CONTROL-M/Restart
- CONTROL-D and CONTROL-V
- CONTROL-O
- CONTROL-M/Analyzer

You can perform the adaptation for these product groups in any order that you choose.

If you are using the Partial Adaptation method, you can first adapt some of the products and then continue with the Upgrade/Fallback phase for those individual products. For more information, see [“Partial adaptation” on page 97](#).

- If you set **Enforce Step Order** to **YES** in the ICE Customization popup screen, when you progress through the Adaptation screens, you must mark each step as **COMPLETE** by selecting **C** next to each step. For more information on setting Enforce Step Order, see the *INCONTROL of z/OS Installation Guide*.

## Avoiding Disruption to Production

The Adaptation stage by itself does not disrupt your production work, so it can be performed during normal work hours. However, note the following:

- Make sure you select the correct environments.

The Adapted Environment is the newly installed environment, which will be extensively modified by this process. This environment will eventually become your new Production Environment, but at this stage it still is not. The Reference environment (identified by the Reference Libraries Prefix) is the current live Production Environment, which is not supposed to be modified during the Adaptation process.

- Take into account the following considerations when modifying system procedure libraries and STC libraries:



### NOTE

These considerations do not apply if you choose the value DONTCOPY to your SITEPROC or PROCLIB during the installation or Adaptation of IOA.

- Do not affect the Production Environment behavior during preparation stages. In particular, do not introduce conflicts with the Production Environment STCs and procedures. You can replace such STCs and procedures as part of the Upgrade/Fallback phase, if necessary.
- As long as procedure prefixes and STC prefixes are unique to the new version environment, regardless of its stage (Pilot, Adapted, Secondary Production), there is no conflict with the Production Environment by adding these STCs or procedures to system procedures.

There is also no conflict if the procedure or STC prefixes are the same as those in the Production Environment, but reside in different procedure or STC libraries that either belong to another system or are concatenated after those where the Production procedures or STCs reside.

- If the STC prefixes and target libraries are not changed during the Adaptation stage, as compared to the Pilot Environment stage of the installed environment, there is no need to copy them again using the ICE adaptation steps, as they will automatically be adjusted to point to the correct production core by means of the IOASETid or IOAENVid INCLUDE statements.
- It is possible to prepare the required copies in non-production libraries, especially in the case of the names or prefixes conflicting with existing STCs or procedures, so that the actual replacement would be done manually as part of the Upgrade/Fallback phase.

## General Adaptation Restrictions and Considerations

### Re-adaptation considerations

As long as the Incremental Upgrade phase has not begun, you can repeat the adaptation of a specific product or of IOA and then all products, to realign the new Production Environment with changes that were carried out on the older version Production Environment. Once the Upgrade/Fallback phase starts, you should no longer perform adaptations or re-adaptations, except when using the partial adaptation method (see “[Partial adaptation](#)” below).



## Partial adaptation

It is possible to adapt IOA and other but not all INCONTROL products, and then continue with the Upgrade/Fallback phase. This method is referred to as Partial Adaptation as opposed to a Complete Adaptation, where you perform the adaptations of all products prior to continuing with the next phase.

If you use this method, as long as the Adapted Environment is only partially complete, you will need to return to the Adaptation stage later and complete the adaptation for any products that have not yet been adapted, and then complete the remaining phases of the Incremental Upgrade.

The Partial Adaptation method may pose further restrictions during the Upgrade/Fallback phase. For more information, see [“Preparing for Incremental Upgrade” on page 86](#).

## Freeze period for the older version Production Environment

As soon as you start the adaptation of your Pilot Environment into a fully-Adapted Environment, your older version Production Environment enters a freeze period which will last until the entire Incremental Upgrade process is concluded.

This implies the following restrictions:

- No new products or components can be installed on your older version environment, nor on your newer version environment
- Parameters of the older version environment should not be changed, as their values are duplicated on the new version Adapted Environment. If a parameter does need to change, you may be required to perform the change in both environments.
- If PTFs need to be applied to the older Production Environment version during the freeze period, check if there are corresponding PTFs that would need to be applied to the new Adapted Environment version.

## User-modified DEFARM or xxxPARM

Any local parameters that have been manually added to the DEFARM member in the older version IOA.PARM library will not be recognized by ICE, and will not be included in the current release. If you have made such modifications, you must manually add these parameters to your Adapted Environment after you have completed Adaptation or after you complete any Partial Adaptation iteration, and before you begin the Upgrade/Fallback phase.

## Using jobs in the INSTWORK library

If you want to submit any job from the INSTWORK library of the Adapted Environment, you must re-tailor that job at least once through ICE after the Adaptation stage is complete. The jobs that will reside in the INSTWORK library after the Adaptation will not be usable as they are.

## Pre-Adaptation Steps

### Backup considerations

Before you start the Adaptation stage, you should back several data sets in case you encounter problems while performing the various Adaptation steps. This will enable you to restore the system to its pre-Adaptation state, and re-start the Adaptation stage as necessary.

#### ■ Pilot Environment

The basic list of the Pilot Environment libraries that should be backed up are:

- \* *ilprefa*.PARM
- \* *ilprefa*.INSTWORK
- \* *ilprefa*.PROCLIB
- \* *ilprefa*.CLIST

#### ■ Production Environment

- IOA.PARM Library - You should also back up the IOA.PARM library of your older version Production Environment so you will have a reference point that indicates the contents of your parameter members.
- Operational Libraries - Some Operational libraries of the Production Environment may be changed by the Adaptation process when you select the 'Add new members to C-1 Operational Libs.' steps in the IOA Adaptation or for specific products. These changes are limited to adding new members without replacing existing ones. You should therefore back up the following Operational libraries of Production Environment:

- \* *olprefa*.BANNERS
- \* *olprefa*.CAL
- \* *olprefb*.RULES
- \* *olprefb*.BALMIS
- \* *olprefb*.PARM
- \* *olprefb*.SOLVRULE
- \* *olprefb*.SOLVREP
- \* *olprefb*.SOLVJCL
- \* *olprefd*.APAPARM

```

* olprefd.ACIFPARM
* olprefd.TRANSTO
* olprefd.BKPMIS
* olprefd.DJDEPARM
* olprefd.OUTPUTPARMS
* olprefd.PARM
* olprefd.PRTMIS
* olprefd.REPORTS
* olprefd.RSTMIS
* olprefm.PARM
* olprefm.SCHEDULE
* olprefm.JCLPROMP
* olprefm.PLANMSTR
* olprefo.PARM
* olprefo.RULES
* olprefo.SOLVJCL
* olprefo.SOLVRULE
* olprefo.SOLVKOA
* olprefo.SOLVSCHD
* olprefr.PARM
* olprefv.MIGMIS

```

#### ■ Site libraries

Some members in the site procedure libraries (referenced by the SITEPROC parameter) and STC libraries (referenced by the PROCLIB parameter) may be added or replaced as well if you select this option in the IOA Adaptation or in the Adaptation of a specific product. You should back up the these data sets, as required.

### Verify that the Pilot Environment is not being used

Before entering ICE, verify that the Pilot Environment is not being used. Do this by reviewing the output of the following operator command:

```
D GRS,RES=(SYSDSN,ilprefa.PARM)
```

where *ilprefa* is the IOA Installation prefix of the Pilot Environment.

The following is sample output for this command that indicates that no other address space is using the Pilot Environment:

```
ISG343I 15.40.50 GRS STATUS 678
NO REQUESTORS FOR RESOURCE SYSDSN IOAP.V630.INST.PARM
```

## Initial Adaptation (for all INCONTROL products)

In the Initial Adaptation stage, you create an environment for the CONTROL-*x* products that will use the new current release software core. This includes the messages, parameters, and modules of the new version and the existing IOA and CONTROL-*x* repositories.

This procedure is applicable to all INCONTROL installations, and should be followed before adapting specific products. It includes the adaptation of the IOA core in preparation for product upgrade.

### IOA Adaptation

- 1** Enter ICE of the Pilot Environment that you are going to adapt.
- 2** Do the following in the INCONTROL Installation options screen:
  - A** Check that the Reference Libraries Prefix associated with your Pilot Environment is the same as that of the older version environment you want to upgrade. If it is not, change the Reference Libraries Prefix for your Pilot Environment prior to proceeding with the adaptation steps.
    1. Select Installation.
    2. In the IOA Installation screen, select Update/Select an Environment for Processing.
    3. Select **B** (Browse Environment Details) next to the Pilot Environment in the IOA Installation - Environment definition screen to view the Reference Libraries Prefix.
    4. If the Reference Libraries Prefix is correct, press **PF3** twice to exit to the INCONTROL Installation options screen, and continue with the adaptation process.
    5. If the Reference Libraries Prefix is not correct, press **PF3** to return to the IOA Installation - Environment definition screen.
    6. Select **U** (Update Environment Details) next to the Pilot Environment in the IOA Installation - Environment definition screen.
    7. Enter the Reference Libraries Prefix of the older version environment.
    8. Press **Enter**.
    9. Select **S** (Select) next to the Pilot Environment in the IOA Installation - Environment definition screen.

10. If a prompt is displayed, enter **Y**.

11. After a set of messages is displayed, press **Enter**. You are returned to the ICE main screen.

12. Press **PF3**.

**B** Select Customization.

**C** In the Customization screen, set the **Product ID** to **IOA**.

**D** Select **Product Customization**.

**E** Press **Enter** to display the Major Steps Selection screen, as shown in [Figure 3](#).

**Figure 3 Major Steps Selection screen for IOA**

```

----- Major Steps Selection -----
Environment: I6301H2   Product: IOA

Sel values: S Select step      C Mark step as completed    R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps
-----

```

Sel	Step	Status	Opt	Description
===	=====	=====	===	=====
.	1			IOAPARM Post-Installation
.	2			Customize IOA Dataset Parameters
.	3			Profile Variables
.	4			User EXITs Installation
.	5			Customize IOA Defaults
.	6		Y	Install IOA CICS Support
.	7		Y	Install IOA IMS/DC Support
.	8		Y	Install IOA VTAM Support
.	9		Y	Install IOA COM-LETE Support
.	10		Y	Install IOA IDMS/DC Support
.	11		Y	Install IOA ROSCOE Support
.	12		Y	Install ISPF Support
.	13		Y	Support for Other Products
.	14		Y	Install IOAGATE
.	15		Y	Install IOA Online Monitor
.	16		Y	Setting Up Functional Monitors
.	17		Y	Install KOA and IOA Routes
.	18		Y	Install CONTROL-M Application Server
.	19	*	Y	Adapt to an existing environment
.	20		Y	Install National Language Support

```

-----> End of Major Steps <-----
COMMAND ===>                                SCROLL ===> CSR

```

**3** In the Sel column, select **S** next to step 19 (Adapt to an existing environment) to display the Minor Steps Selection screen, as shown in [Figure 4](#).

**Figure 4 Minor Steps Selection screen for IOA**

```
----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR

Environment: CTPD630   Product: IOA
Major Step: 19   Adapt to an Existing Environment

Sel values: S Select step      C Mark step as completed      R Reset status
             B Browse Step     X Mark step as excluded      ? Help
PF7/PF8   To scroll through all Steps

-----
Sel  Step Status   Type   Opt Description
===  ===  =====  ===   ==  =====
.    1              Extnl   Adaptation Considerations
.    2              Process  Copy parameters and build members
.    3              Data     Check Operational Parameters
.    4              Process  Save Parameters into Installation Libs.
.    5              Job       Y   Copy IOA Started Tasks to Site Library
.    6              Process  Y   Copy Several Procedures to Site Library
.    7              Process  Y   Check and Correct Online Monitor Parm.
.    8              Edit     Check and Correct IOADSNL member
.    9              Edit     Check and Correct IOARULES member
.   10              Job       Add new members to C-1 Operational Libs.
-----> End of Minor Steps <-----

COMMAND ==>                                SCROLL ==> CSR
```

**4** In the Sel column, select **S** next to step 1 (Adaptation Considerations), to display information that you should consider as part of the upgrade process.

**5** Do the following:

- A** Review this information and verify that you are aware of these considerations.
- B** Press **PF3** to return to the Minor Steps Selection screen.
- C** In the Sel column, select **C** next to step 1 to mark it as COMPLETE.

**6** In the Sel column, select **S** next to step 2 (Copy parameters and build members).

**NOTE**



If you have previously invoked the IOA adaptation process, you will be prompted to indicate whether you want to invoke it once again.

**7** A window is displayed with the Adaptation details. Review this information and select **Y** to continue.

**8** In the Sel column, select **S** next to step 3 (Check Operational Parameters) to display the Parameter Data Entry screen. Review the following parameters, and modify them as necessary:

- PROCLIB - The MVS started tasks library. The name of the STC library that you specify in this parameter will be used as the target library name when copying STCs during the Adaptation of IOA and of all specific products. These STCs are started as part of system initialization, by administrators, or by automation or scheduling products. Some of these STCs act as components of INCONTROL products and are started by the corresponding product monitors or daily procedures.

Either specify DONTCOPY to suppress the copy and do it manually during the Upgrade/Fallback phase, or specify the name of an STC library that will not conflict with the existing production. You can also specify a dedicated STC library that will contain only the STCs that are copied during the Adaptation, and then later, as part of the Upgrade/Fallback phase, use this dedicated STC library to manually add or replace the relevant members in the real production STC library.

- SITEPROC - The site's procedure library. The name of the PROC library that you specify in this parameter will be used as the target library name when copying generally used procedures during the Adaptation of IOA and of all specific products. These procedures are generally referenced by jobs that do not have a JCLLIB statement and that use the EXEC PROC=*procname* (or EXEC *procname*) JCL statement to execute procedures that are part of IOA or of the INCONTROL family of products.

Either specify DONTCOPY to suppress the copy and do it manually during the Upgrade/Fallback phase, or specify the name of a procedure library that will not conflict with the existing production. You can also specify a dedicated procedure library that will contain only the procedures that are copied during the Adaptation, and then later, as part of the Upgrade/Fallback phase, use this dedicated procedure library to manually add or replace the relevant members in the real production procedure library.

- PROCPRFA - The first three characters of IOA JCL procedures. This is the prefix that will be used for STC names and procedure names that belong to IOA, when copying them to the site STC library and procedure library. The value that is displayed is the prefix that you selected when installing the Pilot Environment. If you do not change this parameter, the same prefix that was used for the Pilot Environment will be carried on to the Secondary Production Environment, and it will eventually become the only prefix of your production IOA STCs and procedures.

- 9 Press **PF3** to exit and return to the Minor Steps Selection screen. In the Sel column, select **C** next to step 3 to mark it as COMPLETE.
- 10 In the Sel column, select **S** next to step 4 (Save Parameters into Installation Libs.) to build and save parameters into the installation libraries.

At this step, ICE updates the parameter members in the IOA.PARM library, the IOA.PROCLIB library, and the IOA.CLIST library.

- 11** Optionally, in the Sel column, select **S** next to step 5 (Copy IOA Started Tasks to Site Library) to create a job that will copy a number of general started tasks that are part of IOA to the library specified by the PROCLIB parameter.

When selecting this step, ICE will tailor the COPYIOAP job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB COPYIOAP already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

This job will not replace existing members in the STC library. It is not necessary to select this Minor Step if

- the PROCLIB parameter was set to DONTCOPY, or
- the PROCLIB parameter was not modified in Minor Step 3, and you have not modified the PROCPRFA parameter in Minor Step 3

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

- 12** If you selected step 5, do the following:

**A** Submit the job that is displayed and verify that it completes with COND CODE 0000.

**B** Press **PF3** to exit and return to the Minor Steps Selection screen.

**C** In the Sel column, select **C** next to step 5 to mark the step as COMPLETE.

- 13** Optionally, in the Sel column, select **S** next to step 6 (Copy Several Procedures to Site Library) to copy general procedures that are part of IOA, the updated xxxSETid (IOASET), and the updated xxxENVid (IOAENV) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

- 14** If you selected step 6, review the copy report that is displayed. Press **PF3** to exit and return to the Minor Steps Selection screen.



- 15** Optionally, in the Sel column, select **S** next to step 7 (Check and Correct Online Monitor Parm.s.) to display the Update IOA Online Monitor Parameters screen.

The IOA Online monitor must be installed if the IOA Online facility is activated from CICS, IMS/DC, VMON (an IOA VTAM monitor application), IDMS/DC, COM-LETE, TSO (through cross-memory), or ROSCOE (through cross-memory).

This step specifies parameters for IOA Online monitors and for routing user transactions to monitors. The parameters are saved in the IOAXPRM member in the IOA PARM library.

If the names of the IOA STCs are not changed between the older version Production Environment and the newer version Production Environment, no changes are necessary.

Otherwise, review the MONITOR name patterns on the screen, and verify that they match the names of the monitors that are part of the newer version Production Environment. If necessary, use line command A (or primary command ADD) to add new MONITOR definitions that correspond to the new STC names, and use line command D to delete obsolete MONITOR definitions. When adding a new definition that replaces an older definition, make sure that you set the remaining parameters (Maximum Sessions, Transactions, and Timeout) to match those of the original definition that has become obsolete. You may do that either in the Add Monitor screen or in the Update IOA Online Parameters screen (these fields are input fields).

**Figure 5 Update IOA Online Monitor Parameters screen**

```

----- Update IOA Online Monitor Parameters ----- Row 1 of 2
COMMAND ==>                                     SCROLL ==> CSR

Codes in the Sel field:                          Command and Keys:
  D Delete Monitor                               ADD      Add Monitor
  A Add Monitor                                 CANCEL   Exit without Save
                                           PF3/End  Exit and Save

Subsystem name      ==> R630                     Dynamic definition ==> Y   (Y/N)
VTAM Application    ==> R630                     VTAM generic resource ==>
Default transaction ==> IALL
Balance            ==> Y   (Y/N) Session timeout ==> 10

Sel  MONITOR      Max.Ses Transactions Timeout
===  =====
     D620MON*    50      DOLV
-----
     A620MON*    10      *           1
-----
***** Bottom of data *****

COMMAND ==>                                     SCROLL ==> CSR

```

- 16** Press **PF3** to exit and return to the Minor Steps Selection screen.

- 17** In the Sel column, select **S** next to step **8** (Check and Correct IOADSNL member) to edit the IOADSNL member. A sample of this member is shown below:

**Figure 6 Sample of IOADSNL member copied from the older version Production Environment**

000100	*	
000200	*	This member will contain all local changes to the IOADSN member.
000300	*	
000400	DATASET	DAUHIST,
000500		SEQ=1,
000600		DD=DAHIST,
000700		DSN=%HISTORY%
000800	SYSOUT	SYSPRINT,
000900		DD=SYSPRINT,
001000		CLASS=*

- 18** Add, modify, or delete dynamic allocations in the IOADSNL member as required. Take special note of DATASET statements with DSN values that refer to the older version installation libraries.

If you have CONTROL-D installed at your site, and if you are upgrading from version 6.2.xx and you have a DASKL definition in the IOADSNL member that points to operational library *olprefd.SKL* of the older version environment, remove that definition because the CONTROL-D SKL library is now an installation library (*ilprefd.SKL*).

Save your changes and press **PF3** to exit and return to the Minor Steps Selection screen.

- 19** In the Sel column, select **C** next to step **8** to mark the step as COMPLETE.
- 20** In the Sel column, select **S** next to step **9** (Check and Correct IOARULES member) to edit the IOARULES member.

Modify the IOARULES member of the IOA PARM library of the Adapted Environment to include all system rule tables referenced by the older version IOARULES member. However, modify the references to the installation libraries of the older version to the corresponding installation libraries of the newer version. Do not modify references to the CONTROL-O *olpref0.RULES* library, as this operational library will still be used by the newer version.

Save your changes and press **PF3** to exit and return to the Minor Steps Selection screen.

- 21** In the Sel column, select **S** next to step **10** (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the

Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.



#### NOTE

Unlike other steps in the adaptation process, which do not directly affect the older version Production Environment libraries, this step permanently modifies the older version Production Environment libraries. However, this modification is limited to adding, and not replacing members in the older version Production Environment libraries.

When selecting this step, ICE will tailor the NM1COPYA job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYA already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

## 22 Do the following:

- A** Submit the job that is displayed, and verify that it completes with COND CODE 0000.
- B** Press **PF3** to exit and return to the Minor Steps Selection screen.
- C** In the Sel column, select **C** next to step **9** to mark the step as COMPLETE.

After all steps are completed, the statuses of all elements in the Minor Steps Selection screen are now marked COMPLETE. The environment you first installed as the Pilot Environment is now becoming the Adapted Environment, which points to your production core files. When you complete the rest of the Adaptation phases, this environment will be ready to be used as the Secondary Production Environment.

After the IOA Adaptation is complete, all of the MODExxx compatibility variables in the Adapted environment are set to downward compatible values. These values are extracted from the Primary Production environment. To review these values:

- 1** Enter ICE.
- 2** Select Customization.
- 3** Select environment.

- 4 Enter IOA in the product field.
- 5 Select Product Customization.
- 6 Select Major Step 1 ("IOAPARM Post-Installation").
- 7 Browse Minor Step 2 ("Set compatibility mode"). See [Figure 7](#) for a screen sample:

**Figure 7      MODExxx variable values after IOA Adaptation of new version environment**

Product: IOA		Major Step: 1	Specify IOA Parameters
Environment: V630		Minor Step: 2	IOA compatibility mode
Codes in the VALUE field:		Function keys and Commands:	
= Insert from Reference		PF7/8    Scroll through all parameters	
/ Insert from Default		PF3/End   Exit and Save	
? Display Help		Cancel   Exit without Save	
Variable	Value	Reference	Description
=====	=====	=====	=====
MODEIOA	2	2	IOA Running compatibility mode
MODECDAM	2	2	CDAM Running compatibility mode
MODECTM	2	2	CTM Running compatibility mode
MODEASM	2	2	CTM A.S. Running compatibility mode
MODECTB	2	2	CTB Running compatibility mode
MODECTR	2	2	CTR Running compatibility mode
MODECTT	2	2	CTT Running compatibility mode
MODECTD	2	2	CTD Running compatibility mode
MODEASD	2	2	CTD A.S. Running compatibility mode
MODECTV	2	2	CTV Running compatibility mode
MODECTO	2	2	CTO Running compatibility mode
MODEASO	2	2	CTO A.S. Running compatibility mode
-----> End of Parameters <-----			
COMMAND ==>		SCROLL ==> CSR	

Product Adaptations (for specific INCONTROL products)

CONTROL-M and CONTROL-M/Restart Adaptation

CONTROL-M Adaptation steps

- 1 Enter ICE.
- 2 Do the following in the INCONTROL Installation options screen:
  - A Select Customization.
  - B In the Customization screen, set the **Product ID** to **CTM**.

**C Select Product Customization.****D Press Enter to display the Major Steps Selection screen, as shown in Figure 8.****Figure 8 Major Steps Selection Screen for CONTROL-M**

```

----- Major Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR
Environment: DOC630D   Product: CTM
Sel values: S Select step      C Mark step as completed      R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps
-----
Sel Step Status      Opt Description
=== =====
.      1  *          CTMPARM Post-Installation
.      2  *          Customize CONTROL-M Dataset Parameters
.      3  *          Specify additional CONTROL-M Parameters
.      4              Y Install CONTROL-M ISPF Support
.      5              Y Install Event Manager (CMEM)
.      6              Y JES Considerations
.      7  *          Y Adapt to an Existing Environment
.      8              Y Conversion installation
.      9              Y Customization conclusion
-----> End of Major Steps <-----

```

**3 In the Sel column, select S next to step 7 (Adapt to an Existing Environment) to display the Minor Steps Selection screen, as shown in Figure 9.****Figure 9 Minor Steps Selection screen for CONTROL-M**

```

----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR
Environment: DOC630D   Product: CTM
Major Step: 7   Adapt to an Existing Environment
Sel values: S Select step      C Mark step as completed      R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps
-----
Sel Step Status      Type Opt Description
=== =====
.      1              Process Refresh CTM parameters from C-1 libs.
.      2              Data  Check Operational Parameters
.      3              Process Save Parameters into Installation Libs.
.      4              Job   Y Copy CTM Started Tasks to Site Library
.      5              Process Y Copy Several Procedures to Site Library
.      6              Process Y Check and Correct IOAGATE Parameters
.      7              Job   Add new members to C-1 Operational Libs.
-----> End of Minor Steps <-----

```

**4 In the Sel column, select S next to step 1 (Refresh CTM parameters from C-1 libs.) to recreate the CTMPARM, the CONTROL-M SYSPLEX, and the CMEM members.****5 In the Sel column, select S next to step 2 (Check Operational Parameters). Review the following parameters, and modify them as necessary:**

- **PROCNAMM** - Name of CONTROL-M general daily procedure. This parameter is used by the CONTROL-M monitor to select the correct CONTROL-M general daily procedure when starting it. Verify that the name is that of the newer version CONTROL-M general New Day procedure.

If the CONTROL-M STCs were not renamed, then the name of the newer version general New Day procedure will be xxxTDAY where xxx is the value of the PROCPRFM of the newer version environment.

- **PROCPRFM** - First three characters of CONTROL-M JCL procedures. This is the prefix that will be used for STC names that belong to CONTROL-M, when copying them to the site STC library that was reviewed in Minor Step 3 of the IOA Adaptation. The value that is displayed is the prefix that you selected when installing the Pilot Environment. If you do not change this parameter, the same prefix that was used for the Pilot Environment will be carried on to the Secondary Production Environment, and it will eventually become the only prefix of your production CONTROL-M STCs.
- 6 Press **PF3** to exit and return to the Minor Steps Selection screen. In the Sel column, select **C** next to step 2 to mark the step as COMPLETE.
  - 7 In the Sel column, select **S** next to step 3 (Save Parameters into Installation Libs.) to update the CONTROL-M parameters due to the changes that occurred during the previous steps.
  - 8 Optionally, in the Sel column, select **S** next to step 4 (Copy CTM Started Tasks to Site Library) to create a job that will copy a number of general started tasks that are part of CONTROL-M to the library specified by the PROCLIB parameter in Minor Step 3 of the IOA Adaptation.

When selecting this step, ICE will tailor the COPYCTMP job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB COPYCTMP already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

This job will not replace existing members in the STC library. It is not necessary to select this Minor Step if

- The PROCLIB parameter was set to DONTCOPY, or
- The PROCLIB parameter was not modified in Minor Step 3 of the IOA Adaptation, and you have not modified the PROCPRFM and PROCNAMM parameters in Minor Step 2

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

- 9 Optionally, in the Sel column, select **S** next to step 5 (Copy Several Procedures to Site Library) to copy a number of general procedures that are part of CONTROL-M and the updated *xxxSETid* (IOASET) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.
- 10 If you selected step 5, do the following:
  - A Review the copy report that is displayed.
  - B Press **PF3** to exit and return to the Minor Steps Selection screen.
  - C In the Sel column, select **C** next to step 5 to mark the step as COMPLETE.
- 11 Optionally, in the Sel column, select **S** next to step 6 (Check and Correct IOAGATE Parameters) to display the IOAGATE Parameters Menu, with a list of substeps for the selected parameter member, as shown in [Figure 10](#). This step allows you to configure your IOAGATE and associated Application Servers.

At this point, only configure the ECAPARMx member associated with your CONTROL-M Application Server.

**Figure 10 IOAGATE Parameters Menu**

```
----- IOAGATE Parameters Menu -----
OPTION  ==>

Parameter Member:

0  ECAPARMx      - Select the ECAPARMx (x=suffix)
1  Application    - Define/Update Application Server
2  Channel       - Define/Update Channel
3  Global        - Global IOAGATE Parameters (Optional)
4  Build         - Build the Parameter Member
```

The ECAPARMx members have been copied from your older version Production Environment. The copied members have not yet been modified for your new version environment. Modify the copied ECAPARMx member for your CONTROL-M Application Server, as follows:

- A** In the OPTION field of the IOAGATE Parameters Menu, select **0** to select the ECAPARMx member you want to update (x=suffix, which may be blank), and to open the ECAPARM Handling screen, as shown in [Figure 11](#).

**Figure 11** Select ECAPARM panel

```
----- ECAPARM Handling -----
COMMAND ==>

Select ECAPARMx ==> ECAPARM

Enter          : Continue the process
PF3/END or CANcel: To exit the process
-----

Select the ECAPARMx (where x is the suffix of the ECAPARM and can be blank)
you want to build or update.
```

- B** In the OPTION field of the IOAGATE Parameters Menu, select **1** to display the Define/Update Application Server screen. Change the name of the CONTROL-M Application Server to be able to distinguish between the older version Production Environment CTMAS and the new version environment CTMAS. Press **PF3** to exit and return to the Minor Steps Selection screen.

Examples of this process are shown in [Figure 12](#) and [Figure 13](#).

**Figure 12** Older version Production Environment CTMAS

```
----- Create/Update Application Server ----- Row 1 to 1 of 1
COMMAND ==>                                SCROLL ==> CSR

Codes in the Sel field:                    Command and Keys:
  D Delete Application Server              Add      To Add an application server
  A Advanced Parameters                   PF3/End Exit

Sel  Appl          Channel  Procname
===  =====
    M              M1      M62AS
***** Bottom of data *****
```

**Figure 13** Current release CTMAS

```
----- Create/Update Application Server ----- Row 1 to 1 of 1
COMMAND ==>                                SCROLL ==> CSR

Codes in the Sel field:                    Command and Keys:
  D Delete Application Server              Add      To Add an application server
  A Advanced Parameters                   PF3/End Exit

Sel  Appl          Channel  Procname
===  =====
    M              MC      M63AS
***** Bottom of data *****
```

- C** Skip Option 2 (Define/Update Channel).



- D** Skip Option 3 (Global IOAGATE Parameters (Optional)).
  - E** In the OPTION field of the IOAGATE Parameters Menu, select 4 to build the updated ECAPARMx you selected in STEP 0 above.
  - F** Press **PF3** to exit and return to the Minor Steps Selection screen for the CONTROL-M adaptation. Any steps that have been completed will be marked COMPLETE.
- 12** In the Sel column, select **S** next to step 7 (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.



#### NOTE

Unlike other steps in the adaptation process, which do not directly affect the older version Production Environment libraries, this step permanently modifies the older version Production Environment libraries. However, this modification is limited to adding, and not replacing members in the older version Production Environment libraries.

When selecting this step, ICE will tailor the NM1COPYM job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYM already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

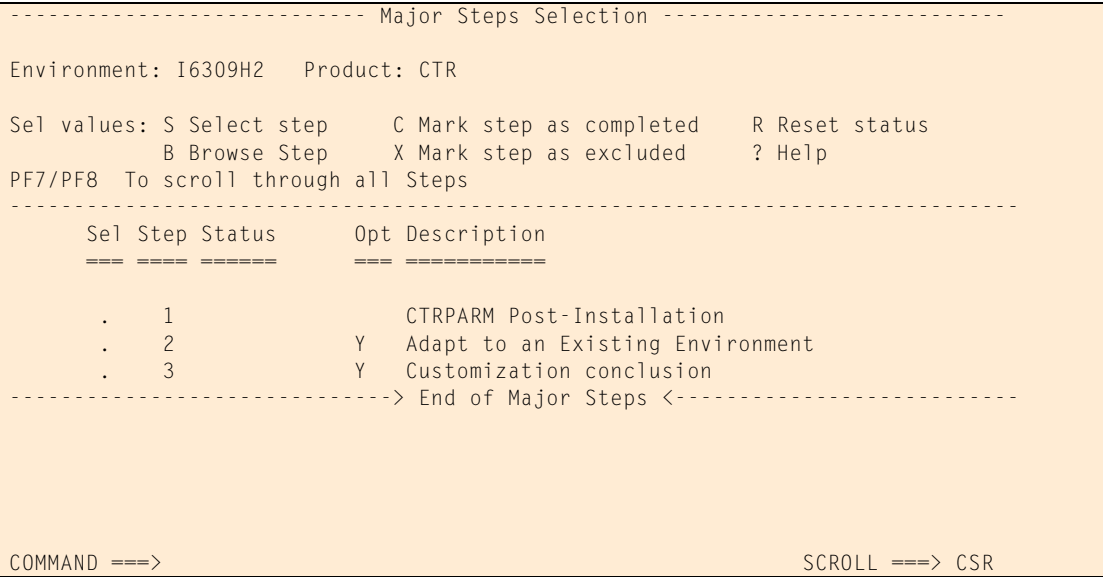
- 13** Do the following:
- A** Submit the job that is displayed and verify that it completes with COND CODE 0000.
  - B** Press **PF3** to exit and return to the Minor Steps Selection screen.
  - C** In the Sel column, select **C** next to step 7 to mark the step as COMPLETE.

CONTROL-M/Restart Adaptation steps

Skip this step if you do not have CONTROL-M/Restart installed at your site.

- 1 Enter ICE.
- 2 Do the following in the INCONTROL Installation options screen:
  - A Select Customization.
  - B In the Customization screen, set the **Product ID** to **CTR**.
  - C Select **Product Customization**.
  - D Press **Enter** to display the Major Steps Selection screen, as shown in [Figure 14](#).

Figure 14 Major Steps Selection screen for CONTROL-M/Restart



- 3 In the Sel column, select **S** next to step 2 (Adapt to an Existing Environment) to display the Minor Steps Selection screen as shown in [Figure 15](#).

**Figure 15 Minor Steps Selection screen for CONTROL-M/Restart**

```

----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR

Environment: CTPD630   Product: CTR
Major Step: 2   Adapt to an Existing Environment

Sel values: S Select step      C Mark step as completed    R Reset status
             B Browse Step     X Mark step as excluded     ? Help
PF7/PF8   To scroll through all Steps
-----
Sel  Step Status  Type  Opt Description
===  ===  =====  ===  ==
.    1          Process    Refresh CTR parameters from C-1 libs.
.    2          Data       Check Operational Parameters
.    3          Process    Save Parameters into Installation Libs.
.    4          Process  Y  Copy Several Procedures to Site Library
.    5          Job       Add new members to C-1 Operational Libs.
.    6          Extnl     Post Adaptation Considerations
-----> End of Minor Steps <-----
COMMAND ==>                                SCROLL ==> CSR

```

- 4 In the Sel column, select **S** next to step 1 (Refresh CTR parameters from C-1 libs.) to recreate the CTRPARM member.
- 5 In the Sel column, select **S** next to step 2 (Check Operational Parameters). Review the following parameters, and modify them as necessary:
  - PROCPRFR - First three characters of CONTROL-M/Restart JCL procedures. It is needed if you want to use CONTROL-M/Restart procedure names that differ from those you used in your older version Production Environment.

This is the prefix that will be used for procedure names that belong to CONTROL-M/Restart, when copying them to the site procedure library that was reviewed in Minor Step 3 of the IOA Adaptation. The value that is displayed is the prefix that you selected when installing the Pilot Environment. If you do not change this parameter, the same prefix that was used for the Pilot Environment will be carried on to the Secondary Production Environment, and it will eventually become the only prefix of your production CONTROL-M/Restart procedures.

- CTRPROC - CONTROL-M/Restart procedure name. This parameter is used by the CONTROL-M monitor to select the correct CONTROL-M/Restart procedure when inserting its step into jobs. Verify that the name is that of the older version CONTROL-M/Restart procedure. You will change the procedure name as part of the Upgrade/Fallback of CONTROL-M/Restart, unless you have CONTROL-M/Tape installed, then as part of the Upgrading Non-Compliant Component phase for CONTROL-M/Tape. For more information on upgrading CONTROL-M/Restart as part of the Incremental Upgrade process, see [“CONTROL-M/Tape considerations” on page 147](#).

If the CONTROL-M/Restart procedures were not renamed, then the name of the older version procedure will be xxxTROLR where xxx is the value of the PROCPRFR of the older version environment.

- 6 Press **PF3** to exit and return to the Minor Steps Selection screen. In the Sel column, select **C** next to step 2 to mark the step as COMPLETE.
- 7 In the Sel column, select **S** next to step 3 (Save Parameters into Installation Libs.) to update the CONTROL-M/Restart parameters due to the changes that occurred during the previous steps.
- 8 Optionally, in the Sel column, select **S** next to step 4 (Copy Several Procedures to Site Library) to copy a number of general procedures that are part of CONTROL-M/Restart and the updated xxxSETid (IOASET) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.

If you perform this step, review the considerations about updating system libraries under “[Avoiding Disruption to Production](#)” on page 95.

- 9 If you selected step 4, review the copy report that is displayed. Press **PF3** to exit and return to the Minor Steps selection screen. In the Sel column, select **C** next to step 4 to mark the step as COMPLETE.
- 10 In the Sel column, select **S** next to step 5 (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.

---

#### **NOTE**



Unlike other steps in the adaptation process, which do not directly affect the older version Production Environment libraries, this step permanently modifies the older version Production Environment libraries. However, this modification is limited to adding, and not replacing members in the older version Production Environment libraries.

---

When selecting this step, ICE will tailor the NM1COPYR job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYR already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

**11** Do the following:

- A** Submit the job that is displayed and verify that it completes with COND CODE 0000.
- B** Press **PF3** to exit and return to the Minor Steps Selection screen.
- C** In the Sel column, select **C** next to step 5 to mark the step as COMPLETE.

**12** In the Sel column, select **S** next to step 6 (Post Adaptation Considerations), to display information that you should consider when you complete the adaptation of CONTROL-M/Restart.

**13** Do the following:

- A** Review this information and verify that you are aware of these considerations.
- B** Press **PF3** to return to the Minor Steps Selection screen.
- C** In the Sel column, select **C** next to step 6 to mark the step as COMPLETE.

## CONTROL-D and CONTROL-V Adaptation

### CONTROL-D Adaptation steps

- 1** Enter ICE.
- 2** Do the following in the INCONTROL Installation options screen:
  - A** Select Customization.
  - B** In the Customization screen, set the **Product ID** to CTD.
  - C** Select **Product Customization**.
  - D** Press **Enter** to display the Major Steps Selection screen, as shown in [Figure 16](#).

Figure 16 Major Steps Selection screen for CONTROL-D

```
----- Major Steps Selection -----
Environment: I6301H2   Product: CTD

Sel values: S Select step      C Mark step as completed      R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps

-----
Sel Step Status      Opt Description
=== ===
.   1                CTDPARM Post-Installation
.   2                Y  XEROX Printer Support
.   3                Y  AFP (APA) Printer Support
.   4                Y  Connection with CONTROL-D for DS
.   5                Customize CONTROL-D User Files
.   6                Customize CONTROL-D Dataset Parameters
.   7                Y  Adapt to an Existing Environment
.   8                Y  Customization conclusion
-----> End of Major Steps <-----

COMMAND ==>                                SCROLL ==> CSR
```

3 In the Sel column, select **S** next to step 7 (Adapt to an Existing Environment) to display the Minor Steps Selection screen, as shown in Figure 17.

Figure 17 Minor Steps Selection screen for CONTROL-D

```
----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR

Environment: CTPD630   Product: CTD
Major Step: 7   Adapt to an Existing Environment

Sel values: S Select step      C Mark step as completed      R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps

-----
Sel Step Status      Type  Opt Description
=== ===
.   1                Process Refresh CTD parameters from C-1 libs.
.   2                Data   Check Operational Parameters
.   3                Process Save Parameters into Installation Libs.
.   4                Job    Y  Copy CTD Started Tasks to Site Library
.   5                Process Y  Copy Several Procedures to Site Library
.   6                Process Y  Check and Correct IOAGATE Parameters
.   7                Job    Add new members to C-1 Operational Libs.
-----> End of Minor Steps <-----

COMMAND ==>                                SCROLL ==> CSR
```

4 In the Sel column, select **S** next to step 1 (Refresh CTD parameters from C-1 libs.) to recreate the CTDPARM member.

- 5 In the Sel column, select **S** next to step 2 (Check Operational Parameters). Review the following parameters, and modify them as necessary:

- **PROCPRFD** - First three characters of CONTROL-D JCL procedures. It is needed if you want to use CONTROL-D procedure names that differ from those you used in your older version Production Environment.

This is the prefix that will be used for STC names and procedure names that belong to CONTROL-D, when copying them to the site STC library and procedure library that were reviewed in Minor Step 3 of the IOA Adaptation. The value that is displayed is the prefix that you selected when installing the Pilot Environment. If you do not change this parameter, the same prefix that was used for the Pilot Environment will be carried on to the Secondary Production Environment, and it will eventually become the only prefix of your production CONTROL-D STCs and procedures.

- **PROCNAME** - CONTROL-D New Day procedure name. This parameter is used by the CONTROL-D monitor to select the correct CONTROL-D daily procedure when starting it. Verify that the name is that of the newer version CONTROL-D New Day procedure.

If the CONTROL-D STCs were not renamed, then the name of the newer version New Day procedure will be xxxNDAY where xxx is the value of the PROCPRFD of the newer version environment.

- **PRTSTC** - CONTROL-D PRINT monitor name. This parameter is used by the CONTROL-D monitor to select the correct CONTROL-D PRINT monitor when starting it. Verify that the name is that of the newer version CONTROL-D PRINT monitor.

If the CONTROL-D STCs were not renamed, then the name of the newer version PRINT monitor will be xxxPRINT where xxx is the value of the PROCPRFD of the newer version environment.

- 6 Press **PF3** to exit and return to the Minor Steps Selection screen. In the Sel column, select **C** next to step 2 to mark the step as COMPLETE.
- 7 In the Sel column, select **S** next to step 3 (Save Parameters into Installation Libs.) to update the CONTROL-D parameters due to the changes that occurred during the previous step.
- 8 In the Sel column, select **S** next to step 4 (Copy CTD Started Tasks to Site Library) to create a job that will copy a number of general started tasks that are part of CONTROL-D to the library specified by the PROCLIB parameter.

When selecting this step, ICE will tailor the COPYCTDP job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB COPYCTDP already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

This job will not replace existing members in the STC library. It is not necessary to select this Minor Step if

- the PROCLIB parameter was set to DONTCOPY, or
- the PROCLIB parameter was not modified in Minor Step 3 of the IOA Adaptation, and you have not modified the PROCPRFD, PROCNAMD, and PRTSTC parameters in Minor Step 2

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

**9** If you selected step **4**, do the following:

**A** Submit the job that is displayed and verify that it completes with COND CODE 0000.

**B** Press **PF3** to exit and return to the Minor Steps Selection screen.

**C** In the Sel column, select **C** next to step **4** to mark the step as COMPLETE.

**10** Optionally, in the Sel column, select **S** next to step **5** (Copy Several Procedures to Site Library) to copy a number of general procedures that are part of CONTROL-D and the updated xxxSETid (IOASET) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

**11** If you selected the previous step, review the copy report that is displayed. Press **PF3** to exit and return to the Minor Steps selection screen.

**12** Optionally, in the Sel column, select **S** next to step **6** (Check and Correct IOAGATE Parameters) to display the IOAGATE Parameters Menu, with a list of substeps for the selected parameter member, as shown in [Figure 18](#). This step allows you to configure your IOAGATE and associated Application Servers.

At this point, only configure the ECAPARMx members associated with your CONTROL-D Application Servers.



**Figure 18 IOAGATE Parameters Menu**

```

----- IOAGATE Parameters Menu -----
OPTION ==>

Parameter Member:

0  ECAPARMx      - Select the ECAPARMx (x=suffix)
1  Application    - Define/Update Application Server
2  Channel        - Define/Update Channel
3  Global         - Global IOAGATE Parameters (Optional)
4  Build          - Build the Parameter Member

```

The ECAPARMx members have been copied from your older version Production Environment. The copied members have not yet been modified for your new version environment. Modify the copied ECAPARMx members for your CONTROL-D Application Servers, as follows:

- A** In the OPTION field of the IOAGATE Parameters Menu, select **0** to select the ECAPARMx member you want to update (x=suffix, which may be blank), and to open the ECAPARM Handling screen, as shown in [Figure 19](#).

**Figure 19 Select ECAPARM panel**

```

----- ECAPARM Handling -----
COMMAND ==>

Select ECAPARMx ==> ECAPARM

Enter          : Continue the process
PF3/END or CAncel: To exit the process
-----

Select the ECAPARMx (where x is the suffix of the ECAPARM and can be blank)
you want to build or update.

```

- B** In the OPTION field of the IOAGATE Parameters Menu, select **1** to display the Create/Update Application Server screen. Change the name of the CONTROL-D Application Server to be able to distinguish between the older version Production Environment CTDAS and the new version environment CTDAS. Examples of this process are shown in [Figure 20](#) and [Figure 21](#).

Figure 20 Older version Production Environment CTDAS

```
----- Create/Update Application Server ----- Row 1 to 1 of 1
COMMAND ==>                                SCROLL ==> CSR

Codes in the Sel field:                    Command and Keys:
  D Delete Application Server              Add      To Add an application server
  A Advanced Parameters                   PF3/End Exit

Sel  Appl          Channel  Procname
===  =====
      D              MC      D62AS
***** Bottom of data *****
```

Figure 21 Current release CTDAS

```
----- Create/Update Application Server ----- Row 1 to 1 of 1
COMMAND ==>                                SCROLL ==> CSR

Codes in the Sel field:                    Command and Keys:
  D Delete Application Server              Add      To Add an application server
  A Advanced Parameters                   PF3/End Exit

Sel  Appl          Channel  Procname
===  =====
      D              MC      D63AS
***** Bottom of data *****
```

- C Skip Option 2 (Define/Update Channel).
  - D Skip Option 3 (Global IOAGATE Parameters (Optional)).
  - E In the OPTION field of the IOAGATE Parameters Menu, select 4 to build the updated ECAPARMx you selected in Step 0 above.
  - F Press PF3 to exit and return to the Minor Steps Selection screen for the CONTROL-D adaptation. Any steps that have been completed will be marked COMPLETE.
- 13 In the Sel column, select S next to step 7 (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.

When selecting this step, ICE will tailor the NM1COPYD job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYD already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==> Y (Y/N)
```

**14** Do the following:

- A** Submit the job that is displayed and verify that it completes with COND CODE 0000.
- B** Press **PF3** to exit and return to the Minor Steps Selection screen.
- C** In the Sel column, select **C** next to step 7 to mark the step as COMPLETE.

**15** To enable use of the Control-D reports transformation option, use the relevant option of the following:



**NOTE**

If in the previous release the CTD RESLIB library was allocated as &DBPREFD.RESLIB, after CONTROL-D adaptation, RESLIB is automatically allocated with the correct prefix. (In such a case, ignore the current step.)

- If you used the transformation option in a previous CONTROL-D release, add the following definition to the member IOADSNL in the IOA PARM library, which allows you to continue using the CTD RESLIB library from the previous environment:

```
DATASET DARESRLIB,
  SEQ=1,
  DD=DARESRLIB,
  DSN=old_PREFD.RESLIB
```

- If you did not previously work with transformers, create a new CTD RESLIB file for resource management, as follows:
  - A. Delete the CTD RESLIB allocated during installation.
  - B. Run CTDFRESL, which allocates the CTD RESLIB with correct RECFM and LRECL.

### CONTROL-V Adaptation steps

- 1** Enter ICE.
- 2** Do the following in the INCONTROL Installation options screen:

- A Select Customization.
- B In the Customization screen, set the **Product ID** to **CTV**.
- C Select **Product Customization**.
- D Press **Enter** to display the Major Steps Selection screen, as shown in [Figure 22](#).

Figure 22 Major Steps Selection screen for CONTROL-V

```
----- Major Steps Selection -----
Environment: I6301H2   Product: CTV

Sel values: S Select step      C Mark step as completed    R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps
-----
      Sel Step Status      Opt Description
      ==  ==  ==
      .   1                CTVPARM Post-Installation
      .   2                Archive Sever Post-Installation
      .   3                Customize CONTROL-V User Files
      .   4                Y  Install CENTERA support
      .   5                Y  Adapt to an Existing Environment
      .   6                Y  Customization conclusion
-----> End of Major Steps <-----

COMMAND ==>                                SCROLL ==> CSR
```

- 3 In the Sel column, select **S** next to step 5 (Adapt to an Existing Environment) to display the Minor Steps Selection screen, as shown in [Figure 23](#).

Figure 23 Minor Steps Selection screen for CONTROL-V

```
----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR
```

**Figure 23 Minor Steps Selection screen for CONTROL-V**

Environment: CTPD630    Product: CTV					
Major Step: 5    Adapt to an Existing Environment					
Sel values: S Select step            C Mark step as completed            R Reset status					
B Browse Step            X Mark step as excluded            ? Help					
PF7/PF8    To scroll through all Steps					
-----					
Sel	Step	Status	Type	Opt	Description
===	===	=====	=====	===	=====
.	1		Process		Refresh CTV parameters from C-1 libs.
.	2		Data		Check Operational Parameters
.	3		Process		Save Parameters into Installation Libs.
.	4		Process	Y	Copy Several Procedures to Site Library
.	5		Edit		Edit Media Parameters and Build IOASPRM
.	6		Job		Add new members to C-1 Operational Libs.
-----> End of Minor Steps <-----					
COMMAND ==>			SCROLL ==> CSR		

**4** In the Sel column, select **S** next to step 1 (Refresh CTV parameters from C-1 libs.) to recreate the CTVPARM member.

**5** In the Sel column, select **S** next to step 2 (Check Operational Parameters). Review the following parameters, and modify them as necessary:

- PROCPRFV - First three characters of CONTROL-V JCL procedures. It is needed if you want to use CONTROL-V procedure names that differ from those you used in your older version Production Environment.
- PROCNAMV - Name of the IOA Archive Server procedure. Verify that the name is that of the newer version of the IOA Archive Server (IOASMON).

If the IOA STCs were not renamed, then the name of the newer version procedure will be xxxSMON where xxx is the value of the PROCPRFA of the newer version environment.

**6** Press **PF3** to return to the Minor Steps Selection menu. In the Sel column, select **C** next to step 2 to mark the step as COMPLETE.

**7** In the Sel column, select **S** next to step 3 (Save Parameters into Installation Libs.) to update the CONTROL-V parameters due to the changes that occurred during the previous step.

**8** Optionally, in the Sel column, select **S** next to step 4 (Copy Several Procedures to Site Library) to copy a number of general procedures that are part of CONTROL-V and the updated xxxSETid (IOASET) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.

If you perform this step, review the considerations about updating system libraries under “[Avoiding Disruption to Production](#)” on page 95.

- 9 If you selected step 4, review the copy report that is displayed. Press **PF3** to exit and return to the Minor Steps selection screen.
- 10 In the Sel column, select **S** next to step 5 (Edit Media Parameters and Build IOASPRM) in order to build the IOASPRM member. Do not modify the media parameters displayed in the editor.
- 11 Press **PF3** to return to the Minor Steps Selection menu. By doing this, the IOASPRM member is rebuilt.
- 12 In the Sel column, select **S** next to step 6 (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.



---

**NOTE**

Unlike other steps in the adaptation process, which do not directly affect the older version Production Environment libraries, this step permanently modifies the older version Production Environment libraries. However, this modification is limited to adding, and not replacing members in the older version Production Environment libraries.

---

When selecting this step, ICE will tailor the NM1COPYV job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYV already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

- 13 Do the following:
  - A Submit the job that is displayed and verify that it completes with COND CODE 0000.
  - B Press **PF3** to exit and return to the Minor Steps Selection screen.
  - C In the Sel column, select **C** next to step 5 to mark the step as COMPLETE.

## CONTROL-O Adaptation

- 1 Enter ICE.
- 2 Do the following in the INCONTROL Installation options screen:
  - A Select Customization.
  - B In the Customization screen, set the **Product ID** to **CTO**.
  - C Select **Product Customization**.
  - D Press **Enter** to display the Major Steps Selection screen, as shown in [Figure 24](#).

**Figure 24 Major Steps Selection screen for CONTROL-O**

----- Major Steps Selection -----		
Environment: I6301H2    Product: CTO		
Sel values: S Select step      C Mark step as completed      R Reset status		
B Browse Step      X Mark step as excluded      ? Help		
PF7/PF8    To scroll through all Steps		
Sel	Step	Opt Description
===	=====	=====
.	1	CTOPARM Post-Installation
.	2	Customize CONTROL-O Dataset Parameters
.	3	Y ON SMS support of CONTROL-O
.	4	Y Install CONTROL-O CICS Interface
.	5	Y Install CONTROL-O IMS/DC Interface
.	6	Y COSMOS Customization
.	7	Y CONTROL-O Communication
.	8	Y OMEGAMON Support
.	9	Y Adapt to an Existing Environment
.	10	Y Customization conclusion
-----> End of Major Steps <-----		
COMMAND ==>		
SCROLL ==> CSR		

- 3 In the Sel column, select **S** next to step **9** (Adapt to an Existing Environment) and press **Enter** to display the Minor Steps Selection screen, as shown in [Figure 25](#).

**Figure 25 Minor Steps Selection screen for CONTROL-O**

```
----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR

Environment: CTPD630   Product: CTO
Major Step: 9   Adapt to an Existing Environment

Sel values: S Select step      C Mark step as completed      R Reset status
             B Browse Step     X Mark step as excluded      ? Help
PF7/PF8   To scroll through all Steps

-----
Sel  Step  Status   Type   Opt Description
===  ===  =====  ===   ==  =====
.    1                Process   Refresh CTO parameters from C-1 libs
.    2                Data      Check Operational Parameters
.    3                Process   Save Parameters into Installation Libs.
.    4                Job       Y   Copy CTO Started Tasks to Site Library
.    5                Process   Y   Copy Several Procedures to Site Library
.    6                Process   Y   Check and Correct IOAGATE Parameters
.    7                Job       Add new members to C-1 Operational Libs.
-----> End of Minor Steps <-----

COMMAND ==>                                SCROLL ==> CSR
```

**4** In the Sel column, select **S** next to step 1 (Refresh CTO parameters from C-1 libs.) to recreate the CTOPARM member.

**5** In the Sel column, select **S** next to step 2 (Check Operational Parameters). Review the following parameter, and modify it as necessary:

- PROCPRFO - First three characters of CONTROL-O JCL procedures. This is the prefix that will be used for STC names and procedure names that belong to CONTROL-O, when copying them to the site STC library and procedure library that were reviewed in Minor Step 3 of the IOA Adaptation. The value that is displayed is the prefix that you selected when installing the Pilot Environment. If you do not change this parameter, the same prefix that was used for the Pilot Environment will be carried on to the Secondary Production Environment, and it will eventually become the only prefix of your production CONTROL-O STCs and procedures.
- SRVPROC - The Server STC procedure. This parameter is used by the CONTROL-O monitor to select the correct CONTROL-O Server STC procedure when starting it. Leave this parameter blank if you use the standard name for the Server STC procedure, or verify that the name is that of the newer version CONTROL-O Server STC procedure.

If the CONTROL-O STCs were not renamed, then the standard name of the newer version CONTROL-O Server STC procedure will be xxxSERV where xxx is the value of the PROCPRFO of the newer version environment.

**6** Press **PF3** to exit and return to the Minor Steps Selection screen.



- 7 In the Sel column, select **C** next to step 2 to mark the step as COMPLETE.
- 8 In the Sel column, select **S** next to step 3 (Save Parameters into Installation Libs.) to update the CONTROL-O parameters due to the changes that occurred during the previous step.
- 9 Optionally, in the Sel column, select **S** next to step 4 (Copy CTO Started Tasks to Site Library) to create a job that will copy a number of general started tasks that are part of CONTROL-O to the library specified by the PROCLIB parameter. This job will not replace existing members in the STC library. It is not necessary to select this Minor Step if
  - The PROCLIB parameter was set to DONTCOPY, or
  - The PROCLIB parameter was not modified in Minor Step 3 of the IOA Adaptation, and you have not modified the PROCPRFO parameter in Minor Step 2

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

When selecting this step, ICE will tailor the COPYCTOP job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB COPYCTOP already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

- 10 If you selected step 4, do the following:
  - A Submit the job that is displayed and verify that it completes with COND CODE 0000.
  - B Press **PF3** to exit and return to the Minor Steps Selection screen.
  - C In the Sel column, select **C** next to step 4 to mark the step as COMPLETE.
- 11 Optionally, in the Sel column, select **S** next to step 5 (Copy Several Procedures to Site Library) to copy a number of general procedures that are part of CONTROL-O and the updated xxxSETid (IOASET) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.

If you perform this step, review the considerations about updating system libraries under “[Avoiding Disruption to Production](#)” on page 95.

- 12 If you selected step 5, review the copy report that is displayed. Press **PF3** to exit and return to the Minor Steps selection screen.
- 13 Optionally, in the Sel column, select **S** next to step 6 (Check and Correct IOAGATE Parameters) to display the IOAGATE Parameters Menu, with a list of substeps for the selected parameter member, as shown in [Figure 26](#). This step allows you to configure your IOAGATE and associated Application Servers.

At this point, only configure the ECAPARMx member associated with your CONTROL-O Application Server.

Figure 26 IOAGATE Parameters Menu

```
----- IOAGATE Parameters Menu -----
OPTION ==>

Parameter Member:

0  ECAPARMx      - Select the ECAPARMx (x=suffix)
1  Application    - Define/Update Application Server
2  Channel        - Define/Update Channel
3  Global         - Global IOAGATE Parameters (Optional)
4  Build          - Build the Parameter Member
C  Copy           - Copy channel network map members from C-1 library
```

The ECAPARMx members have been copied from your older version Production Environment. The copied members have not yet been modified for your new version environment. Modify the copied ECAPARMx member for your CONTROL-O Application Server, as follows:

- A** In the OPTION field of the IOAGATE Parameters Menu, select **0** to select the ECAPARMx member you want to update (x=suffix, which may be blank), and to open the ECAPARM Handling screen, as shown in [Figure 27](#).

Figure 27 Select ECAPARM panel

```
----- ECAPARM Handling -----
COMMAND ==>

Select ECAPARMx ==> ECAPARM

Enter           : Continue the process
PF3/END or CAnCel: To exit the process
-----

Select the ECAPARMx (where x is the suffix of the ECAPARM and can be blank)
you want to build or update.
```

- B** In the OPTION field of the IOAGATE Parameters Menu, select **1** to display the Create/Update Application Server screen. Change the name of the CONTROL-O Application Server to be able to distinguish between the older version Production Environment CTOAS and the new version environment CTOAS. Examples of this process are shown in [Figure 28](#) and [Figure 29](#).

**Figure 28 Older version Production Environment CTOAS**

```

----- Create/Update Application Server ----- Row 1 to 1 of 1
COMMAND ==>>                                SCROLL ==> CSR

Codes in the Sel field:                      Command and Keys:
  D Delete Application Server                Add      To Add an application server
  A Advanced Parameters                     PF3/End Exit

Sel  Appl          Channel  Procname
===  =====
      0              MC      062AS
***** Bottom of data *****

```

**Figure 29 Current release CTOAS**

```

----- Create/Update Application Server ----- Row 1 to 1 of 1
COMMAND ==>>                                SCROLL ==> CSR

Codes in the Sel field:                      Command and Keys:
  D Delete Application Server                Add      To Add an application server
  A Advanced Parameters                     PF3/End Exit

Sel  Appl          Channel  Procname
===  =====
      0              MC      063AS
***** Bottom of data *****

```

- C** Skip Option 2 (Define/Update Channel).
- D** Skip option 3 (Global IOAGATE Parameters (Optional)).
- E** In the OPTION field of the IOAGATE Parameters Menu, select **4** to build the updated ECAPARMx you selected in STEP 0 above.
- F** In the OPTION field of the IOAGATE Parameters Menu, select **C** to copy the Channel Network Map members for the channels associated with this ECAPARMx. The Channel Network Map members are only used by the CONTROL-O Application Server.
- G** Press **PF3** to exit and return to the Minor Steps Selection screen for the CONTROL-O adaptation. Any steps that have been completed will be marked COMPLETE.

- 14** In the Sel column, select **S** next to step 7 (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.



---

**NOTE**

---

Unlike other steps in the adaptation process, which do not directly affect the older version Production Environment libraries, this step permanently modifies the older version Production Environment libraries. However, this modification is limited to adding, and not replacing members in the older version Production Environment libraries.

---

When selecting this step, ICE will tailor the NM1COPYO job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYO already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

- 15** Do the following:
- A** Submit the job that is displayed and verify that it completes with COND CODE 0000.
  - B** Press **PF3** to exit and return to the Minor Steps Selection screen.
  - C** In the Sel column, select **C** next to step 7 to mark the step as COMPLETE.

## CONTROL-M/Analyzer Adaptation

- 1** Enter ICE.
- 2** Do the following in the INCONTROL Installation options screen:
  - A** Select Customization.
  - B** In the Customization screen, set the **Product ID** to CTB.
  - C** Select **Product Customization**.

**D** Press **Enter** to display the Major Steps Selection screen, as shown in [Figure 30](#).

**Figure 30 Major Steps Selection screen for CONTROL-M/Analyzer**

```

----- Major Steps Selection -----
Environment: I6301H2   Product: CTB

Sel values: S Select step      C Mark step as completed    R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps
-----
Sel Step Status      Opt Description
=== ===
.    1              CTBPARM Post-Installation
.    2              Customize CONTROL-M/Analyzer Datasets
.    3              Y  Adapt to an Existing Environment
-----> End of Major Steps <-----
COMMAND ==>                                SCROLL ==> CSR

```

**3** In the Sel column, select **S** next to step 3 (Adapt to an Existing Environment) to display the Minor Steps Selection screen, as shown in [Figure 31](#).

**Figure 31 Minor Steps Selection Screen for CONTROL-M/Analyzer**

```

----- Minor Steps Selection -----
COMMAND ==>                                SCROLL ==> CSR

Environment: CTPD630   Product: CTB
Major Step: 3   Adapt to an Existing Environment

Sel values: S Select step      C Mark step as completed    R Reset status
              B Browse Step    X Mark step as excluded      ? Help
PF7/PF8  To scroll through all Steps
-----
Sel Step Status      Type      Opt Description
=== ===
.    1              Process    Refresh CTB parameters from C-1 libs.
.    2              Data       Y  Check Operational Parameters
.    3              Process    Save Parameters into Installation Libs.
.    4              Process    Y  Copy Several Procedures to Site Library
.    5              Job        Add new members to C-1 Operational Libs.
-----> End of Minor Steps <-----
COMMAND ==>                                SCROLL ==> CSR

```

**4** In the Sel column, select **S** next to step 1 (Refresh CTB parameters from C-1 libs.) to recreate the CTBPARM member.

**5** Optionally, in the Sel column, select **S** next to step 2 (Check Operational Parameters). Review the following parameters, and modify them as necessary:

- **PROCPRFB** - First three characters of CONTROL-M/Analyzer JCL procedures. This is the prefix that will be used for procedure names that belong to CONTROL-M/Analyzer, when copying them to the site and procedure library. The value that is displayed is the prefix that you selected when installing the Pilot Environment. If you do not change this parameter, the same prefix that was used for the Pilot Environment will be carried on to the Secondary Production Environment, and it will eventually become the only prefix of your production CONTROL-M/Analyzer procedures.
- **CTBPROC** - CONTROL-M/Analyzer procedure name. This parameter is used by the CONTROL-M monitor to select the correct CONTROL-M/Analyzer procedure when inserting its step into jobs. Verify that the name is that of the older version CONTROL-M/Analyzer procedure. You will change the procedure name as part of the Upgrade/Fallback of CONTROL-M/Analyzer.

If the CONTROL-M/Analyzer procedures were not renamed, then the name of the older version procedure will be xxxTROLB where xxx is the value of the PROCPRFB of the older version environment.

- 6 Press **PF3** to exit and return to the Minor Steps Selection screen.
- 7 In the Sel column, select **C** next to step 2 to mark the step as COMPLETE.
- 8 In the Sel column, select **S** next to step 3 (Save Parameters into Installation Libs.) to update the CONTROL-M/Analyzer parameters due to the changes that occurred during the previous step.
- 9 Optionally, in the Sel column, select **S** next to step 4 (Copy Several Procedures to Site Library) to copy general procedures that are part of CONTROL-M/Analyzer and the updated xxxSETid (IOASET) to the library specified by the SITEPROC parameter. Be aware that this process will replace existing members in the SITEPROC library that have the same name. It is not necessary to select this Minor Step if the SITEPROC parameter was set to DONTCOPY.

If you perform this step, review the considerations about updating system libraries under [“Avoiding Disruption to Production” on page 95](#).

- 10 If you selected step 4, review the copy report that is displayed. Press **PF3** to exit and return to the Minor Steps selection screen.
- 11 In the Sel column, select **S** next to step 5 (Add new members to C-1 Operational Libs.) to create a job that will copy new members from the Operational Libraries of the Pilot Environment (the newer version) into the Operational Libraries of the original Production Environment. This job will not replace existing members in the Operational Libraries of the Production Environment; it will just add members that are missing. This step is necessary because the same Operational Libraries of the older version Production Environment are also linked to the newer version Adapted Environment.



### NOTE

Unlike other steps in the adaptation process, which do not directly affect the older version Production Environment libraries, this step permanently modifies the older version Production Environment libraries. However, this modification is limited to adding, and not replacing members in the older version Production Environment libraries.

When selecting this step, ICE will tailor the NM1COPYB job in your INSTWORK library according to the parameters of your environment. If you select this step more than once, and an older copy of that job already exists in this library, the following prompt will be displayed:

```
The JOB NM1COPYB already exists
in the INSTWORK library.
```

```
Do you want to Replace the
existing copy ==>  Y  (Y/N)
```

### 12 Do the following:

- A** Submit the job that is displayed and verify that it completes with COND CODE 0000.
- B** Press **PF3** to exit and return to the Minor Steps Selection screen.
- C** In the Sel column, select **C** next to step 5 to mark the step as COMPLETE.

## Incremental Upgrade/Fallback

Once the preparations are done, you have a Primary Production runtime Environment and Adapted Environment, both configured to work with the same core and operational libraries. In Upgrade/Fallback phase, you will incrementally change your system to start using the Adapted Environment as a Secondary Production Environment and will incrementally stop using the Primary Production Environment.

By the end of this phase you will no longer use the Primary Production Environment at all, essentially transforming the Secondary Production Environment to be your only production environment. These incremental changes are done in several upgrade iterations (see “[Version upgrade iterations](#)” on page 136).

## Working with Primary and Secondary Production Environments in parallel

For the majority of the Incremental Upgrade/Fallback phase you will be working in parallel with the Primary and Secondary Production Environments. As you move through this phase, you will be upgrading address space groups with the goal of upgrading all address spaces related to product groups, and then finally upgrading all address spaces for all product groups. These sets of upgrades are referred to as upgrade iterations (see “[Version upgrade iterations](#)” below).

During this stage of the Upgrade/Fallback phase, products will remain in backward compatibility mode (meaning that `MODExxx=2` in the PARM library of the Secondary Production Environment). This means that these products can work in either Production Environment. As long as the compatibility mode remains 2, you can fall back to the previous version if necessary. However, once a product is in non-compatible mode (see “[Transitioning to Incompatible Mode](#)” on page 138), the upgrade will be irreversible.

### Version upgrade iterations

An upgrade iteration is the upgrading an address space, or a group of address spaces, within the systems that work with the Primary Production Environment. Address spaces can be upgraded in any order.

#### Preparing for upgrade iterations

- 1 Refer to [Table 25 on page 141](#) to identify the address spaces to be upgraded, and to determine if additional address spaces need to be upgraded as part of the same group.
- 2 Eventually all address spaces that are related to the INCONTROL environment, whether currently running or scheduled to run, must be upgraded using the procedure described in “[Procedure for each upgrade iteration](#)” on page 137.

You can generate a list of address spaces that are currently running with the Primary Production Environment using the following command:

```
D GRS,RES=(SYSDSN,ilprefa.PARM)
```

where *ilprefa* is the IOA installation library prefix for the Primary Production Environment.



## Procedure for each upgrade iteration

This procedure refers to upgrading a group of address spaces within a given upgrade iteration.

- 1 Terminate the long running active address spaces within the group based on their types. Refer [Table 25 on page 141](#) to determine if there are any further requirements.
- 2 When no address spaces within the group are active, identify the modifications that would be required to cause the address spaces to use the Secondary Production Environment when they are started. For more information, see [“Considerations for individual address spaces” on page 143](#).

If the modifications are done by updating or replacing a system element, such as a procedure, STC, or REXX program, back up the corresponding system library, as necessary.

Examples of some of these modifications are:

- changing JCL statements such as replacing references to procedures
- changing a parameter of monitor or of an automation product to instruct it to select a different procedure, job, or STC
- selecting a different logon procedure
- copying or replacing procedures in site procedure or STC libraries

### NOTE



If the system element that causes the change of versions has the same name in the old and in the new version, then you have to replace the element at the time that you perform the version switch. If, however, you have two such system elements, each corresponding to a different runtime environment version, with names that are not conflicting, you can just select the correct one instead replacing one with the other.

- 3 Perform the necessary modifications that you identified in [step 2](#). In some cases, some modifications can affect more than one address space within the group. Restart, log back on, or resubmit any address spaces you terminated in [step 1](#).
- 4 Verify the functionality of the address spaces that were upgraded. Short running address spaces will eventually be tested on their next run.
- 5 If you encounter problems with an address space within the group, and you decide that you need to fall back, collect diagnostic information for the problem, and then perform [step 2](#) through [step 4](#), this time performing modifications so that the Primary Production Environment will be used.

- 6 Fall back to Primary versions of address spaces if necessary. You can only fall back as long as compatible MODExxx=2 for the product the address space is associated to, and you are not using a feature from that new version.



---

**WARNING**

---

Falling back to the older version (to the Primary Production Environment) for a given address space is only possible while the compatibility modes (MODExxx values) that are associated with that products are the same in both environments. This means that you can only fall back when working in compatibility modes for the associated products, and you cannot fall back if you increased any of the compatibility modes to the full feature value, which is available only for the newer version. If you do attempt a fallback to the older version after increasing a compatibility mode in the newer version, you will risk creating unpredictable results and possible corruption of data.

---

## Backup considerations

Back up the repositories and the user files that are to be handled in this iteration.

## Transitioning to Incompatible Mode

### Transitioning a product to incompatible (full feature) mode

When all associated address spaces for a product are using the new version and have been verified to work correctly, for that product you can set MODExxx=3 (incompatible, or full feature, mode). Before changing any product to MODExxx=3 in the Secondary Production Environment, you must ensure that the Primary Production Environment is not being used with that product. To avoid someone using the product with the Primary Production Environment, you should set the corresponding CTx parameter from Y to N in the PRODUCTS statement of the IOAPARM member in the IOA.PARM library of the Primary Production Environment. This action prevents you from accessing that specific product in the Primary Production Environment.

### Upgrading the Modes for an Associated Address Space

Some address spaces might need to be restarted in order to identify the change in the product mode. When you change a product to MODExxx=3 and at least one associated address space picks up the non-compatible mode, it is unpredictable what would happen if an associated address space of the lower version environment were to start working.




---

**NOTE**

In order to avoid having mixed modes during the working day, BMC recommends upgrading the product mode as part of the New Day process. (Mixed modes may complicate or prevent simple fallback.)

---

## Backup considerations

Back up the repositories and the user files that are to be upgraded in this iteration.

## Changing MODExxx to Incompatible (Full Feature)

Perform this ICE procedure after all address spaces for a particular product are working in CR compatible mode.

- 1 Access ICE.
- 2 In the INCONTROL Installation options screen, do the following:
  - A Select Customization.
  - B In the Customization screen, set the **Product ID** to **IOA**.
  - C Select **Product Customization**.
  - D Press **Enter** to display the Major Steps Selection screen.
- 3 In the Sel column, select **S** next to step 1 (IOAPARM Post-Installation) to display the Minor Steps Selection screen.
- 4 In the Sel column, select **S** next to step 2 (Set compatibility mode) to display the Parameter Data Entry screen.
- 5 Set the value of the compatibility variables to 3 by product, as shown in the example screen in [Figure 32 on page 140](#).




---

**WARNING**

The value of the MODEIOA compatibility variable *must* remain set to **2** until you are satisfied that *all* INCONTROL products at your site have been adapted to your satisfaction, and that you do not intend to perform a fallback procedure.

---

Figure 32 Setting MODExxx compatibility modes through ICE

Product: IOA	Major Step: 1	IOAPARM Post-Installation	
Environment: V630	Minor Step: 2	Set compatibility mode	
Codes in the VALUE field:		Function keys and Commands:	
= Insert from Reference		PF7/8	Scroll through all parameters
/ Insert from Default		PF3/End	Exit and Save
? Display Help		Cancel	Exit without Save
-----			
Variable	Value	Reference	Description
=====	=====	=====	=====
MODEIOA	2	2	IOA Running compatibility mode
MODECDAM	2	2	CDAM Running compatibility mode
MODECTM	3	2	CTM Running compatibility mode
MODEASM	3	2	CTM A.S. Running compatibility mode
MODECTB	2	2	CTB Running compatibility mode
MODECTR	3	2	CTR Running compatibility mode
MODECTT	2	2	CTT Running compatibility mode
MODECTD	2	2	CTD Running compatibility mode
MODEASD	2	2	CTD A.S. Running compatibility mode
MODECTV	2	2	CTV Running compatibility mode
MODECTO	2	2	CTO Running compatibility mode
MODEASO	2	2	CTO A.S. Running compatibility mode
-----> End of Parameters <-----			
COMMAND ==>		SCROLL ==> CSR	

**WARNING**



After all products and IOA are activated in CR mode, changing the value of the compatibility variables back to 2 (C-1 compatible) may cause unpredictable results.

- 6 After verifying that these values have been changed to 3, press PF3 to exit.
- 7 To update IOA parameter members, in the Sel column, select S next to step 4 (Save Parameters into Installation Libs) .

# Upgrade dependencies

The first column of Table 25 list a typical set of address spaces that you would need to upgrade. The remaining columns in the table indicate where these address spaces have dependencies on INCONTROL products. You should not set MODExxx=3 (incompatible) for a given product until the address spaces associated with that product have been upgraded.

Further upgrade and fallback considerations for certain address spaces are noted in “Considerations for individual address spaces” on page 143.

Table 25 Upgrade dependencies table (part 1 of 3)

Address Space	IOA	CTM	CTM/ Rest.	CTD	CTV	CTO	CTM/ Anal.	CTM/ Tape	Comment
CICS	x	x					x		<ul style="list-style-type: none"> <li>■ IOA online service</li> <li>■ CONTROL-M transaction</li> <li>■ CONTROL-O automation interface</li> </ul>
CMEM monitor	x	x		x		x			<ul style="list-style-type: none"> <li>■ IOA Global variables</li> <li>■ DO FORCEJOB and DO RESOURCE</li> <li>■ DO CTD MISSION</li> </ul>
CONTROL-D Application Server (IOAAS)	x			x	x				
CONTROL-D monitor	x			x	x		x		
CONTROL-D Newday procedure	x			x	x				
CONTROL-D printing monitors	x			x					
CONTROL-D utilities	x			x					
CONTROL-M Application Server (CTMAS)	x	x							
CONTROL-M jobs with a CONTROL-M/Analyzer step	x	x					x		
CONTROL-M jobs with a CONTROL-M/Restart step	x	x	x					x	CONTROL-M/Restart may use CONTROL-M/Tape API if sample exit CTRX001T is used. In this case, the CONTROL-M/Restart procedure should be in the same version as CONTROL-M/Tape, even if CONTROL-M/Restart is in another version.
CONTROL-M Monitor	x	x	x			x	x		
CONTROL-M Newday procedure	x	x							
CONTROL-M Utilities	x	x							
CONTROL-M/Analyzer utilities	x						x		
CONTROL-O Application Server (CTOAS)	x	x		x		x			CTOAS may have activities that use CONTROL-M API or CONTROL-D utilities

**Table 25 Upgrade dependencies table (part 2 of 3)**

Address Space	IOA	CTM	CTM/ Rest.	CTD	CTV	CTO	CTM/ Anal.	CTM/ Tape	Comment
CONTROL-O monitor	x	x		x		x			<ul style="list-style-type: none"> <li>■ IOA Global variables</li> <li>■ DO FORCEJOB and DO RESOURCE</li> <li>■ DO CTD MISSION</li> <li>■ The monitor may use CTMAPI</li> </ul>
CONTROL-O servers	x					x			
CONTROL-O utilities	x					x			
CONTROL-O XAM jobs or TSO users	x					x			Users that use CONTROL-O API
CONTROL-V utilities	x			x	x			x	The CTVCLMIG utility may call CONTROL-M/Tape API to mark volumes as scratch or to create the list of released volumes
FTP server	x					x			<ul style="list-style-type: none"> <li>■ Triggering rules</li> <li>■ CONTROL-M for support</li> </ul>
IMS	x					x			<ul style="list-style-type: none"> <li>■ IOA online service</li> <li>■ CONTROL-O automation interface</li> </ul>
IOA Archive Server (IOASMON)	x			x	x				Check user files mode
IOA utilities	x	x		x		x			IOA utilities influence the products, IOAGATE, and online monitors
IOA VTAM monitor (IOAVMON)	x								IOA online interface
IOAGATE	x	x		x		x			See the relevant Application Server in this table
IOAOMON	x	x	x	x	x	x	x	x	The online monitor. It can be accessed through a TSO user, CICS, IMS, and ROSCOE online services.
IOASINIT				x	x				<p>If the IOASINIT procedure is not initialized after an adaptation, the following error message is displayed in the CONTROL-D monitor:</p> <pre>CTDW2CE IOA SUBSYSTEM IS NOT ACTIVE. USE IOASINIT PROCEDURE</pre>
Long running STCs	x	x							Executing IOA utilities such as CTMCND or a submit of CONTROL-M by CTMJOB.

Table 25 Upgrade dependencies table (part 3 of 3)

Address Space	IOA	CTM	CTM/ Rest.	CTD	CTV	CTO	CTM/ Anal.	CTM/ Tape	Comment
OMEGAMON	x					x			ON OMEGAEXP rule
Panvalet	x								IOA online interface
ROSCOE	x								IOA online interface
User jobs with a CONTROL-M/Analyzer step	x						x		

## Considerations for individual address spaces

- **Associated address spaces** - These are address spaces that use a specific environment and specific version and have references to these environments and versions. They are upgradable.
- **Indirectly-associated address spaces** - These are address spaces that have an interaction with a real address space in the system. They are not upgradable themselves.
- **STC Names** - If you created new STC names, you must start the new names. Otherwise, if you choose to use the original STC names in the upgraded version you should verify that the new STC names are pointing to the current release libraries (STEPLIB, DAPARM, and DAMSG JCL statements).
- **Non-INCONTROL address spaces** - These address spaces can only be in one IOA release. You need to stop them and modify the STEPLIB, DAPARM, and DAMSG JCL statements with the relevant IOA release library for both the older version and the newer version.
- **Changing products to non-compatible mode (3)** - Do this at end of the New Day procedure. This way, you will start the monitors with a clean environment.
- **CONTROL-M Monitors** - If you work with several CONTROL-M monitors within a parallel SYSPLEX, running in a CTMPLEX configuration, you will be able to achieve continuous availability of CONTROL-M scheduling while performing the upgrades to the monitors. However, this may cause your Global SYSPLEX Monitor

(GSM) to move from one system to another, which for some configurations may impact the performance of the CTMPLEX. To ensure that the location of the GSM within the SYSPLEX ultimately remains the same, take into account the following considerations:

- When stopping a CONTROL-M monitor acting as a Local SYSPLEX Monitor (LSM) and then restarting it with either version, the new monitor will remain a Local SYSPLEX Monitor.
- When stopping the CONTROL-M monitor acting as the Global SYSPLEX Manager, another monitor within the CTMPLEX will immediately assume this responsibility and will automatically switch itself to become the new Global SYSPLEX Manager. Even when you restart the CONTROL-M monitor that was formerly the Global SYSPLEX Manager, in either version, it will not re-assume this status, and it will work as a Local SYSPLEX Monitor.

You can move the GSM back to the original system by stopping the new monitor that became the Global SYSPLEX Manager with a special operator command (not with a standard STOP command), instructing it to reinstate the Global SYSPLEX Manager in the system of your choice. To do this, issue the following operator command to the Global SYSPLEX Manager that you want to stop:

```
F controlm,STOPGSM,new_system
```

In this command:

- *controlm* is the name of the CONTROL-M monitor that is currently acting as a Global SYSPLEX Manager
- *new\_system* is the system where the monitor that you want to become the new Global SYSPLEX Manager is running.

This will cause the target CONTROL-M monitor to stop, then the monitor on the specified system will switch itself to become the new Global SYSPLEX Manager. When you restart the CONTROL-M monitor that was stopped by this command, it will become a Local SYSPLEX Monitor.

For more information, see the discussion about CONTROL-M and controlling the CTMPLEX in the CONTROL-M chapter of the *INCONTROL for z/OS Administrator Guide*.

- **CONTROL-D monitor** - When you transition forward or back between the old and new version, if the name of the monitor is not the same, you should edit the STARTCD member of the *olprefd.PARM* library and modify the START command of the CONTROL-D monitor to reflect the correct name. This will take effect the next time that the CONTROL-D Daily runs.



- **CONTROL-M/Analyzer** - The CTBPROC parameter is used by the CONTROL-M monitor to select the correct CONTROL-M/Analyzer procedure when inserting its step into jobs. Verify that the name is that of the older version CONTROL-M/Analyzer procedure. In the Upgrade/Fallback phase you change the procedure name as part of the Upgrade/Fallback of CONTROL-M/Analyzer.

If the CONTROL-M/Analyzer procedures were not renamed, then the name of the older version procedure will be xxxTROLB and the name of the newer version procedure will be yyyTROLB, where xxx is the value of the PROCPRFB of the older version environment, and yyy is the value of the PROCPRFB of the newer version environment.

- **CONTROL-O and CMEM monitors** – In order to switch CONTROL-O or CMEM from one environment (version) to another, you must fully stop the current monitor that is running and then start the corresponding monitor of the other environment. While switching versions, it is not possible to use the 'swapping' method in which a new monitor is started over an existing monitor while the existing monitor is still running.



#### NOTE

During the time that a CONTROL-O or CMEM monitor is down, most system events that are usually monitored by it are lost, and rules that correspond to these events will not be triggered. Similarly, messages and commands that are issued on the system while the monitor is down will not be written to the Automation Log (for CONTROL-O) or /DAACTLOG (for CMEM).

For that reason, BMC Software recommends replacing CONTROL-O and CMEM monitors at a time of lower system activity, and to review the SYSLOG afterwards to verify that no important events were missed.

When starting a CONTROL-O or CMEM monitor of either environment after having stopped the corresponding monitor of the other environment, one or more messages appear, depending on the version of the monitor which is started:

- If the monitor that is started is of version 6.3.xx or above, or 6.2.xx at maintenance level 6.2.22 or above, the following informational message appears:

```
CTM22DI monitor SWT CONTROL BLOCK IS REALLOCATED DUE TO
VERSION CHANGE FROM xxx TO yyy
```

In this message

- *monitor* – either CONTROL-O or CMEM
- *xxx* – the major version of CONTROL-O or CMEM that was running previously and has been stopped (for example, 6.2)
- *yyy* – the major version of CONTROL-O or CMEM that was just started (for example, 6.3)

In this case, no action is necessary.

- If the monitor that is started is of version 6.2.xx at maintenance level 6.2.21 or lower, the following messages appear:

```
CTO919E SUBSYSTEM subs WAS ACTIVE FOR ANOTHER CONTROL-O  
VERSION xxx
```

```
*nnnn CTO91AA PLEASE CONFIRM THE VERSION. VALID REPLY IS  
'6.2'. DIFFERENT VALUE WILL TERMINATE THE MONITOR
```

In these messages

- *subs* – the IOA subsystem defined in the SSNAME parameter of the environment
- *xxx* – the major version of CONTROL-O or CMEM that was running previously and has been stopped (for example, 6.3).
- *nnnn* – the REPLY number assigned to message CTO91AA by z/OS

In this case, reply '6.2' (without the apostrophes) to message CTO91AA by issuing the following operator command:

```
R nnnn,6.2
```

- **Address space groups** – An address space group is a set of address spaces within a single MVS system that communicate through shared memory. All members of an address group must use the same runtime environment, either the Primary Environment or the Secondary Environment. To ensure this, perform the upgrade or fallback procedure on all members of an address space group at the same time:
  - IOAGATE and CTx Application Server. The ECAPARMx member of the specific gateway determines which application servers are part of that group.
  - All address spaces that work with a specific IOA online monitor (IOAOMON) address space, such as CICS, IMS, or IOAVMON, must use the same runtime environment as that IOAOMON. The IOAXPRM member of the IOA.PARM library defines which address spaces work with which IOAOMON.
  - All address spaces that work with a specific CDAM subsystem, such as CONTROL-D monitors and users who access option U in the IOA Online screens, must use the same runtime environment as that CDAM subsystem. The runtime environment of the CDAM subsystem is that of the IOASINIT task that loaded it. To associate a CDAM subsystem to a different runtime environment, run the IOASTERM task matching its current runtime environment, and then run the IOASINIT task for the environment you want to load.

## Upgrading non-compliant products

This section applies only to installations with CONTROL-M/Tape. Special considerations are also noted if CONTROL-M/Restart is installed together with CONTROL-M/Tape.

### CONTROL-M/Tape considerations

This section is only relevant if you have CONTROL-M/Tape as part of your installation.

CONTROL-M/Tape should be upgraded to the current release as the last product, according to the procedures in [Chapter 2, “Full Upgrade.”](#)

- **Performing a full upgrade for CONTROL-M/Tape**

Before starting the full upgrade of CONTROL-M/Tape, manually change MODECTT=2 to MODECTT=3 in the IOAPARM member.

**NOTE**

Verify the values of the parameters CTTQNAM and CTTRSRV of CONTROL-M/Tape in the IOAPARM member in the IOA.PARM library. In particular, decide if you want to use the same value for the CTTQNAM parameter and the QNAME parameter in the IOAPARM member or a different value. This decision will influence the way you will perform the full upgrade. Refer to the table of IOA operational parameters in the chapter about installing IOA in the *INCONTROL for z/OS Installation Guide*.

CONTROL-M/Tape does not support the Incremental Upgrade. Under certain conditions, other products can use the Incremental Upgrade process to upgrade to the current version of CONTROL-M/Tape. The following factors must be considered:

- The CONTROL-M/Tape subsystem or CONTROL-M/Tape interface cannot be activated as long as the CONTROL-M/Tape mode (MODECTT) is set to 2. The following message will appear in the JOBLOG:

```
CTTPRM: CONTROL-M/TAPE V6.3 REQUIRES MODECTT=3 SPECIFIED IN
IOAPARM PARAMETER MEMBER
```

**NOTE**

- CONTROL-M/Tape online services and interfaces require that the CONTROL-M/Tape new version environment subsystem be active, and because the interfaces may be shared in multiple z/OS systems, CONTROL-M/Tape requires all components to be at the same release level.
- When using IOA online services, the CONTROL-M/Tape option will not be shown on the IOA main panel.

- When you are performing a full upgrade of CONTROL-M/Tape, you should delete, and then allocate and reformat the MDBD, MDBI, STKD, STKI, and TRC data sets.

This can be done in Step 5 of the installation ("Customization Process") or Step 2 of the customization ("Customize CONTROL-M/Tape Datasets"), via the following substeps:

- Substep 5 - Create and Init Media Database
- Substep 6 - Create and Init Stacking Database
- Substep 7 - Create and Init Trace File

- Perform the following steps for a full upgrade:

- [“Step 20. Adjust CONTROL-M/Tape” on page 39](#)
- [“Step 31. Prepare CONTROL-M/Tape” on page 50](#)
- [“Step 47. Migrate CONTROL-M/Tape” on page 77](#)




---

**NOTE**


---

Before starting the CONTROL-M/Tape subsystem or the IOA functional monitor, ensure that MODECTT=3 in the IOAPARM member in the IOA.PARM library.

---

## Fallback Considerations

BMC Software recommends installing CONTROL-M/Tape after all products have been set to incompatible mode. When all products (except CONTROL-M/Tape) are in incompatible mode, it means that there is no need for fallback.

Performing fallback can be done in one of two ways, depending on whether or not you applied the toleration PTFs to CONTROL-M/Tape version 6.2.x:

- If the toleration PTFs were applied, both CONTROL-M/Tape 6.2.x and 6.3.x can use the same databases. Set the CONTROL-M/Tape databases in the IOADSNL member of version 6.2.x to be the same as in version 6.3.x.
- If the toleration PTFs were not applied to CONTROL-M/Tape, you cannot share the databases. Therefore, you must restore the old CONTROL-M/Tape databases and manually add the data that was added to the version 6.3.x databases.

## CONTROL-M/Restart considerations

If you have both CONTROL-M/Tape and CONTROL-M/Restart as part of your installation, CONTROL-M/Restart may use CONTROL-M/Tape API if sample exit CTRX001T is used. In this case, the CONTROL-M/Restart procedure should be in the same version as CONTROL-M/Tape, even if CONTROL-M/Restart is in another version.

The name of the CONTROL-M/Restart procedure is CTRPROC, and it is located in the CTRPARM member.

## Completion of Incremental Upgrade

In this phase, for all products you will set MODExxx=3 and perform post-upgrade cleanup. After transitioning IOA and all INCONTROL products to incompatible mode, the upgrade is complete, and all products are active in current release mode. The older version Production Environment will then be considered the Retired Environment.

**NOTE**

Make sure that you reimplement previous customizations that were made to screens, exits, and so forth into the new environment.

---

## Transitioning to MODExxx=3

Before setting MODExxx=3 in the Secondary Production Environment, ensure that the Primary Production (Retiring) Environment is not being used. To avoid someone using the Primary Production Environment, you should rename the corresponding IOA.PARM library of the Primary Production Environment.

**WARNING**

After IOA is set to current release mode, changing the value of the compatibility variables back to 2 (C-1 compatible) may cause unpredictable results.

---

- 1 Enter ICE.
- 2 Do the following in the INCONTROL Installation options screen:
  - A Select Customization.
  - B In the Customization screen, set the **Product ID** to **IOA**.
  - C Select **Product Customization**.
  - D Press **Enter** to display the Major Steps Selection screen.
- 3 In the Sel column, select **S** next to step 1 (IOAPARM Post-Installation) to display the Minor Steps Selection screen.
- 4 In the Sel column, select **S** next to step 2 (Set compatibility mode) to display the Parameter Data Entry screen.
- 5 Verify that all product compatibility variables (MODExxx) were set to 3.

If not all product compatibility variables are set to 3, this indicates the likelihood that one or more products are not finished the upgrade process. In this case, press **PF3** to exit, complete the upgrade of the specific product, and repeat this procedure to set IOA to the current release.
- 6 Set the value of the MODEIOA compatibility variables to 3, as shown in [Figure 33](#).

**Figure 33 Final MODExxx upgrade settings**

Product: IOA
Major Step: 1
Environment: V630
Minor Step: 2
IOAPARM Post-Installation
Set compatibility mode

Codes in the VALUE field:
= Insert from Reference
/ Insert from Default
? Display Help

Function keys and Commands:
PF7/8 Scroll through all parameters
PF3/End Exit and Save
Cancel Exit without Save

-----
Variable Value Reference Description
=====
MODEIOA 3 2 IOA Running compatibility mode
MODECDAM 3 2 CDAM Running compatibility mode
MODECTM 3 2 CTM Running compatibility mode
MODEASM 3 2 CTM A.S. Running compatibility mode
MODECTB 3 2 CTB Running compatibility mode
MODECTR 3 2 CTR Running compatibility mode
MODECTT 3 2 CTT Running compatibility mode
MODECTD 3 2 CTD Running compatibility mode
MODEASD 3 2 CTD A.S. Running compatibility mode
MODECTV 3 2 CTV Running compatibility mode
MODECTO 3 2 CTO Running compatibility mode
MODEASO 3 2 CTO A.S. Running compatibility mode
-----> End of Parameters <-----

COMMAND ==>
SCROLL ==> CSR

- 7 After verifying that this value has been changed to **3**, press **PF3** to exit.
- 8 In the Sel column, select **S** next to step 4 (Save Parameters into Installation Libs.) to update IOA parameter members.
- 9 Migrate CONTROL-M/Server definitions in the CONTROL-M/Enterprise Manager database from the earlier version to version 6.3.01 by running the `migrate_dc` utility in the CONTROL-M/Enterprise Manager environment. For more information on the `migrate_dc` utility, see the *CONTROL-M/Enterprise Manager Migration Guide*.

## Incremental Upgrade cleanup

You can now perform cleanup and delete any unnecessary files left over from your older version Production Environment, or which you created during the installation of the current release. For further information see [Appendix D, “Incremental upgrade cleanup libraries and files.”](#)





# Technical considerations

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# Overview

The internal format of version 6.3.xx library members such as scheduling tables, missions, and rule definitions may be different from the format in some earlier versions.

Version 6.3.xx products can read definition members written in earlier versions, but products from earlier versions may not be able to read members that were written in version 6.3.xx in a different format.

When a version 6.3.xx product reads a definition member that is in the format of an earlier version, its in-memory representation of the member is converted to the new format. When you exit the screen, it may be necessary to save the member in version 6.3.xx format. If so, you are prompted to decide if you want to save the definition member, even if you did not modify it. If you answer “Yes,” the member is saved in version 6.3.xx format. The member may then be unusable by the version you are now using.

Therefore, do not test version 6.3.xx with your current production version libraries.

## CONTROL-M

Major differences between earlier versions of CONTROL-M and version 6.2.xx are described below. New features of version 6.2.xx are mentioned throughout this chapter, but not in full detail. For information regarding other recent CONTROL-M changes, see the What’s New section of the INCONTROL for z/OS 6.3.07 Release Notes.

### 1. Active Jobs file (AJF) internal structure

The internal structure of the Active Jobs file was redesigned to

- compress data
- improve performance
- reduce I/O

For instructions on migrating the AJF, see [“Step 41. Migrate CONTROL-M” on page 63](#).

After migration:

- All user-written programs and local exits that directly access the Active Jobs file must be adapted to the new format.

- While the CTMMIT and CTMMIC DSECT members are thoroughly changed, the DSECT names and field names that map the different records in the Active Jobs file remain unchanged.
- Macros previously used to access the variable part of the job records (such as, CTMINI, CTMNXT, CTMRUT and CTMCNS) are obsolete, and are replaced by a single service macro CTMCOD. For more information about macro CTMCOD, see the *INCONTROL for z/OS Utilities Guide*.

All standard sample exits are modified to work with the new Active Jobs file format and macros. However, exits generated or locally modified by the user must be reviewed and changed as necessary to ensure their compliance with the new standards, as discussed in the exits section on [page 155](#).

## 2. CONTROL-M Resources file

The standard DD statement DARESF now points to the CONTROL-M RES file. The new DD statement DACNDF points to the new IOA CND file. For more information about the new CND file, see the IOA administration chapter in the *INCONTROL for z/OS Administrator Guide*.

## 3. Exits

Some sample exits that existed in versions prior to 6.3.xx are no longer required since their functionality was incorporated into the new base product and their source code has been removed.

All version 6.3.xx sample exits are adapted to use the new Active Jobs file format. You must use these exits or adapt your own code based on these samples.

Support for the CTM001X exit will be dropped in a future release. For condition references in IN and OUT conditions use the relative date format (+/-nnn) instead.

## 4. CTMPARM

The CTMPARM member is no longer a load module, but a source member.

## 5. Unitary Operator

Version 6.1.xx introduced the logical NOT as a CONTROL-M unitary operator. Conditions that have this type of operator associated with them are called “inverted” conditions. An inverted condition is only “True” if that condition does not exist on the IOA Conditions File. (WM3164, WM0717, WM2242, WM2854)

The logical NOT operator is represented in the condition name by the symbol ¬ (Hex 5f) or \ (Hex e0). This inverted condition name symbol introduces a possible incompatibility with prior releases of CONTROL-M. In prior releases the symbols '¬' and '\ ' were part of the condition name and had no special meaning. Beginning with version 6.1.xx conditions that have a '¬' or '\ ' as their first character are treated differently, because those characters are logical operators.

It is the responsibility of the customer to examine job scheduling definitions and determine whether the condition names contained therein are affected by this newly introduced feature. The CTMXRF utility can be used to produce a condition name cross-reference report to facilitate this examination.

## 6. KSL scripts and JCL that executes KSLs

The CONTROL-M JCL library now contains all the JCLs that execute standard CONTROL-M KSLs. The new IOA.KSL library now contains all of these KSL scripts.

The new KSLs now reflect the changes related to the screens that have been updated since earlier versions.

---

### **WARNING**

Do not use KSLs from earlier versions.

---



Take special care regarding KSLs that access conditions, because in most of the screens, the Date field has moved. Also, be aware that many screens contain mixed case text so, carefully check and modify any user-written or customized KSLs to match the new screen changes.

Users upgrading from earlier versions with customized KSLs should review the note in [step 9. on page 157](#).

As of version 6.2.xx the following KSLs are no longer supported:

- ORDERJOB
- REPCRCND

---

### **NOTE**

In place of KSLs that are no longer supported, use one of the following:

- CONTROL-M CTMAPI (For information, see the *CONTROL-M for z/OS User Guide*.)
  - CTMJOB utility (For information, see the *INCONTROL for z/OS Utilities Guide*.)
  - CTMXRF utility (For information, see the *INCONTROL for z/OS Utilities Guide*.)
- 



## 7. Optional wishes

Most of the CONTROL-M optional wishes that were set using the IOADFLTC macro are now part of the standard CTMPARM member in source format. For more information on xxxPARM source format, see the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

For wishes that are now parameters in the CTMPARM member, the old Wish ID next to the parameter indicates the correlation between the old wish and the new parameter. Some wishes are now part of base code and have been removed.

## 8. Messages

All job-related messages now include the Order-ID of the job (OID=order), to differentiate messages that belong to different invocations of the same job. Note that this change may affect KSLs that access the IOA LOG screen (Screen 5), since the text of the message has been shifted to the right.

## 9. Enhanced and Changed Active Environment screen features (Screen 3)

Of special note are the following enhanced features of Screen 3:

Beginning with version 6.1.xx, screen 3 and any of its subscreens that display JES JOBIDs have been modified to support the z/OS extended 7-digit JES JOBID feature.

Beginning with version 6.1.xx, logical operators that are associated with conditions are no longer displayed as part of the condition names in the 3.? (Why) screen. Users who want to see the logical relationships between conditions should view the IN conditions of the job in the 3.Z. (Zoom) screen.

Beginning with version 6.2.xx, the Show Screen Filter panel of screen 3 has been modified by the addition of the following parameter fields:

- Wait quant – Y/N field used to show or hide all jobs waiting for quantitative resources
- Wait cond – Y/N field used to show or hide all jobs waiting for input conditions
- Wait time – Y/N field used to show or hide all jobs waiting for from or until time data
- Wait contrl – Y/N field used to show or hide all jobs waiting for control resources
- Grp Active – Y/N field used to show or hide all active groups
- Forced OK – Y/N field used to show or hide all jobs that were forced OK
- Grp Held – Y/N field used to show or hide all <GRP Held> jobs
- CMEM Forc – Y/N field used to show or hide all jobs that were forced by CMEM
- Note – Y/N field used to show or hide all jobs that have a note attached to them
- Restarted – Y/N field used to show or hide all jobs that were restarted
- Job – field that enables you to select by jobname
- Appl – field that enables you to select by application
- CPU Id – field that enables you to select by CPU ID
- LPAR – field that enables you to select by LPAR
- Sch Lib – field used to identify the schedule library

Beginning with version 6.2.xx, the SACTLTO parameter was removed and replaced by the LATE parameter. When SACTLTO was used, late jobs could be combined with all other jobs in the Show Screen Filter window of screen 3. In such cases, however, SACTLTO allowed only late jobs to be displayed on screen 3. The LATE parameter permits the display of late jobs together with others.

Beginning with version 6.2.xx, character search criteria are based on masking instead of prefixes. This feature lets you use an asterisk (\*) or query (?) mask character at any point in a search string. The SACTMSK profile variable determines how to treat character search criteria from earlier versions, which do not use masking characters.

There are two groups instead of four on the Show Screen Filter window.

The selection logic for Y/N fields for “In Process,” “Ended,” and “State” was modified. For further information see the *CONTROL-M for z/OS User Guide*.

Beginning with version 6.2.xx, the following screen 3 enhancements have been added:

- Restart Flow options are available in the Restart window
- X (Exit) option invokes the CTMX008 exit
- K (Kill) option kills a job, meaning that the job is cancelled and the status of the job is changed to ENDED NOTOK

#### 10. SYSPLEX System Logger

This feature improves communication between both CMEM and CONTROL-O to CONTROL-M in a SYSPLEX environment. CMEM and CONTROL-O can communicate through the SYSPLEX System Logger instead of using Subsystem-to-Monitor files. This simplifies system configuration and dramatically speeds up CONTROL-M. BMC Software recommends that you use this feature instead of the traditional S2M files, especially in a multiple CPU environment.

#### 11. CONTROL-M statistics file

You may not be able to readily identify some group entity statistics that reside in the CONTROL-M statistics file if they were generated in earlier versions. This is due to internal changes made to the record key of group entity records. Job statistics are not affected by this change.

#### 12. Parameter Prompting Facilities

### 13. Enhanced Job Definition screen features (Screen 2)

- Of special note are the following new parameters and features of Screen 2:
  - SCHENV—The name of the workload management scheduling environment that is to be associated with the job.
  - SYSTEM ID—In JES2, this parameter provides the identity of the system in which the job must be initiated and executed. In JES3, the parameter provides the identity of the processor on which the job must execute.
  - NJE NODE—Identifies the node in the JES system at which the job must execute.
  - TIME ZONE—This parameter adjusts the values specified in the TIME parameter to those in a different time zone. Caution should be exercised to avoid defining a new time zone in an existing job definition, which may cause the job to be rescheduled on a day different than in earlier versions.
  - FROM / UNTIL subparameters of the SCHEDULE TAG ACTIVE parameter—restrict the ordering of jobs using this parameter to those whose ordering dates occur after the FROM date and before the UNTIL date.
  - +EVERY is a new reserved word in the ON PGMST statement of the ON parameter.
  - FORCE, FLUSH, and SNRUN are new ON parameter CODES values.
  - ON SYSOUT — This enhancement enables you to search for a string in the sysout of the job, and perform the actions in the accompanying DO statements if the string is found.
  - DO REMEDY — Enables you to open a problem ticket within the Remedy Helpdesk System, for example, when a specific job fails.
  - STAT CAL — Name of a periodic calendar used to gather average runtime statistics for the job, based on a time period.
  - TIME + DAYS — Time and day limits (FROM, UNTIL, DUE OUT, SHOUT LATE(SUB)) for submitting a job or making a group active.
  - OnOK and OnFail options are provided in the CONTROL and RESOURCE parameters.
  - INSTREAM JCL — Determines whether CONTROL-M submits a JCL stream defined within the job scheduling definition, which overrides the JCL in the member identified in the MEMLIB parameter and the OVERLIB parameter (if specified).



- ADJUST CONDITIONS — Provides an option that enables CONTROL-M to order as a DUMMY job any job with scheduling criteria that are not satisfied on the current ODATE.

For further information about these parameters and features, see the job production parameters chapter of the *CONTROL-M for z/OS User Guide*.

#### 14. IOA LOG considerations

- Some CONTROL-M messages that are issued to the IOA LOG file have been modified to include the Order ID of the jobs they refer to. Because the earlier versions of these messages did not include provision for an Order ID field, when the IOA LOG file is migrated to version 6.1.xx or later, and when screen 3.L or screen 5 is used to view the IOA LOG, the Order ID of these migrated messages is displayed as ?????, indicating that the Order ID of the message is unknown.
- The IOA Log file no longer has a fixed BLKSIZE value. Specifying the block size that you need allows enhanced I/O performance. For details on IOA log file space calculation, see the *IOA Installation* section in the *INCONTROL for z/OS Installation Guide*.

#### 15. ISC facility no longer supported

The Inter-System Communication (ISC) facility is no longer supported. To communicate conditions and resources across CONTROL-M systems, users must employ shared conditions and resources files. For additional information, see the IOA administration chapter of the *INCONTROL for z/OS Administrator Guide*.

#### 16. Connect Direct Support

Connect Direct Support no longer uses the independent IOADDS started task to pass the data set name argument to CONTROL-M. Connect Direct, via the IOADDC module, now passes the data set name to CONTROL-M via the MVS System Logger facility, or directly, calling the IOADDR module (depending on the SYSTLOGR parameter in the IOACPRM IOA.PARM member).

17. LONG condition names can now be entered in DO COND, IN, and OUT conditions. Any screen using conditions, such as screens 4 and 7, have had format changes to accommodate long condition names. Any KSLs that operate in those screens must be modified. The internal structure of long conditions is different than regular conditions. Customers making heavy use of long conditions may need to extend their IOA Conditions file, since each long condition uses twice the space of a regular condition. For further information see the job production parameters chapter of the *CONTROL-M for z/OS User Guide* and the CONTROL-M chapter of the *INCONTROL for z/OS Utilities Guide*.

## 18. Security Considerations

- CONTROL-M now checks that the user has update security authorization to the CONTROL-M OVERLIB JCL library when the COPMEM2O, DELOVRUN, or DELOVRER parameters (in the CTMPARM member of the IOA.PARM library) are set to Y.
- The CONTROL-M New Day procedure and the IOACLCND Conditions Cleanup utility now require that update security authorization be defined to allow processing of conditions in the IOA Conditions file. The required definitions may be found in the description of module IOASE07 in the *INCONTROL for z/OS Security Guide*.

## 19. End User Job Order interface - M6 ISPF utility

The utility no longer supports building a Job List containing duplicate JOBNAMES from the same table and library.

## 20. Support for 7-digit Jes Job ID

The length of the MITJOBID field in the CTMMIT has not changed. For 7-digit support the actual content of the field indicates whether it is a 5-digit id or a 7-digit ID as follows:

- If the first byte of the field is not P, then the jobid is a regular 5-digit number in character format.
- If the first byte of the field is P, then the next 4 bytes are a packed number representing a 7-digit jobid.

## 21. Utilities

- From version 6.2.22, the CTMAPI utility no longer accepts commas as delimiter characters in the utility command syntax. The only acceptable delimiter character is a blank.
- The following keyword parameters have been changed in the CTMBLT utility:
  - MAIL-SUBJ is now MAIL-SB
  - MAIL-TEXT is now MAIL-TX
- If the user is upgrading from version 6.1.xx. or release in which CONTROL-M/Restart was not installed, then PTF PA14710 is required if the user wants to use the CONTROL-M CTMTBUPD utility to modify the SCHENV, SYSTEM ID, or NJE NODE fields.

- The functionality of the CTMRAFL utility has been incorporated into the CTMRFLW utility. BMC Software recommends that you no longer use the CTMRAFL utility.
- Users who code the MODEL input statement to the CTMBLT utility must ensure that any scheduling tables specified in the MODEL statement are in the format required by version 6.3.xx. Failure to do so may lead to corruption in the table created by CTMBLT. To migrate scheduling tables to version 6.3.xx format, use the CTMTLB utility to disassemble the scheduling definition into statements that can be used as input to the CTMTLB utility. For details, see the CTMBLT section of the *INCONTROL for z/OS Utilities Guide*.
- A new utility, CTMTLB, is introduced with version 6.3.01. CTMTLB analyzes CONTROL-M job scheduling definitions and produces the following output:
  - XML output for creating distributed job definitions in CONTROL-M/EM and CONTROL-M/Desktop
  - control statements suitable for input to the CTMBLT utility

## 22. CONTROL-M scheduling algorithm

The CONTROL-M scheduling algorithm has been modified so that the MONTHS parameter always takes precedence over the WDAYs parameters. This means that if there are days in a week which starts in one month and ends in another, and one of the months is scheduled (marked Y) and the other is not scheduled (marked N), the days are scheduled according to the month in which they occur. The scheduling of these days is not dependent on the month in which the week begins or ends. Nevertheless, WDAYs criteria, which depend on the working-day definition in a WCAL calendar are calculated according to the week in which they occur (but are not necessarily scheduled; scheduling depends on whether the MONTH is scheduled).

## 23. Statistics file modifications

The internal structure of the Statistics file (see member CTMIST in the IOA MAC library) was redesigned in version 6.3.00, to

- accommodate additional data fields for each job occurrence (job name, order id, and job status)
- accommodate additional summary data fields (maximum, median, and standard deviation elapsed time)
- increase the maximum number job occurrences per record to 200 (see parameter STENT# in the CTMPARM member of the IOA PARM library)

The IOA online statistics display (using option S in screen 3 or the JOBSTAT command in screen 2) was totally redesigned in version 6.3.00 to accommodate the changes in the internal file structure described above.

The CTMISA (CONTROL-M Statistics Accumulation Utility) has been enhanced to

- allow jobs that ended NOTOK and Dummy jobs to be accumulated
- provide additional cleanup criteria and to allow individual job occurrences within the job statistics record to be cleaned up

For details, see the *INCONTROL for z/OS Utilities Guide*.

For customers using CONTROL-M exits 5 and/or 13:

The User Data fields (JSTJUSER and JSTEUSER in member CTMJST) in the Statistics record file have been reduced to 30 characters each. Any user data exceeding this limit will be truncated.

The default space allocation for the CONTROL-M Statistics file has been increased from 5 cylinders to 50.

## 24. SAMPLE library

The following members in the IOA SAMPLE library, which were introduced by PTF PA06129, have been removed: CTMCDAIL, CTMCJOBS, CTMJOBRO, and CTMPDALU.

Any user requiring the functionality provided by these members should use the CONTROL-M CTMAPI utility. For details, see the section about the CTMAPI utility in the *CONTROL-M User Guide*.

# CONTROL-M/Restart

Major differences between earlier versions of CONTROL-R and CONTROL-M/Restart version 6.3.xx are described below.

## 1. CTRPARM

The CTRPARM member is no longer a load module, but a source member.

## 2. Optional wishes

All CONTROL-M/Restart optional wishes that were set using the IOADFLTC macro are now part of the standard CTRPARM member in source format. For more information on xxxPARM source format, see the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

For wishes that are now parameters in the CTRPARM member, the old Wish ID next to the parameter indicates the correlation between the old wish and the new parameter.

### 3. Exclude data sets from CONTROL-M/Restart processing

In 6.1.xx versions or later of CONTROL-R, data sets were excluded from CONTROL-R processing according to

- data set name, using the \$DEFAULT member in the CONTROL-R RESTPARM library
- DDNAME, using the standard CTRX001E exit

### 4. Multi-volume support

Base CONTROL-M/Restart functionality deletes DASD data sets from the first 6 volumes. Sample Exit CTRX001V deletes DASD data sets that exist on up to 20 additional volumes.

Changes include:

1. the renaming of the RESTPARM library to CTR.PARM, to conform to IOA standards
2. \$EXCLUDE, a member included in the PARM library as of version 6.1.xx or later, can now be used to exclude both DSNs and DDNAMEs. Sample Exit CTRX001E is no longer required and was removed from the product.
3. To preserve backward compatibility, the \$DEFAULT member can still be used for “EXCLUDE DSN” statements, but not to exclude DDNAME. However, BMC Software recommends that you place all exclude statements (both DSN and DDNAME) in the new \$EXCLUDE member.

## CONTROL-M/Tape

Important differences between CONTROL-M/Tape version 6.3.xx and earlier CONTROL-M/Tape versions are listed below:

## 1. Database managed as IOA Access Method

All CONTROL-M/Tape databases for version 6.3.xx (the Media and Stacking databases) are managed as IOA Access Method databases. Therefore, several new IOA Access Method database utilities have replaced the corresponding earlier utilities. [Table 26](#) lists the new utilities and the old utilities that they replaced.

### NOTE



The CONTROL-M/Tape trace file is not a database, and is therefore managed as it was in versions 6.1.xx or later.

**Table 26 New IOA access method database utilities**

Old utilities	New utilities	Description
CTTDBF and CTCRDF	IOADBF	Allocates and formats an IOA Access Method file.
CTTDBID	IOADIG	Verifies the integrity of an IOA Access Method file data component.
CTTDBII	IOADII	Verifies the integrity of an IOA Access Method file index component.
CTTDBDLD	IOADLD	Loads IOA Access Data components from a sequential data set.
CTTDBPRT	IOADPT	Prints records, in dump format, from an IOA Access Method database to a sysout.
CTTDBDUL	IOADUL	Unloads IOA Access Data components to a sequential data set.

### NOTE



Because the CTTDBDUL utility allocates the output sequential file with a disposition of OLD, while the IOADUL utility allocates the output sequential file with a disposition of NEW, BMC Software recommends that you specify the DISPO=OLD parameter when activating the IOADUL utility.

The record layout of the Media database (MDB) has been modified and enlarged to 660 bytes, and the record layout of the stacking database (STK) has been modified.

Since CONTROL-M/Tape is now managed as IOA Access Method databases, the databases can be comprised of a limited number of physical files (extents). Therefore, sites that use software that was developed in-house, and those that read the Media or Stacking databases in QSAM mode, should change their software accordingly. If you use the standard API of CONTROL-M/Tape, then you only need to recompile your programs with the new IOA.MAC and IOA.LOAD libraries.




---

**WARNING**


---

Since the number of available records in the database has now increased, you should consider that your earlier version cannot hold the same number of records. Due to this restriction, you should not increase your tape activity by, for example, defining new volumes or creating more data sets on a daily basis, until you are sure that you will not perform fallback to the earlier version.

---

## 2. Remove number of trace records parameter

The TRCSIZE CTTARM parameter was removed, and the CTTAFR utility that used this parameter has been changed. Beginning with version 6.1.xx the CTTAFR utility receives the number of physical blocks of the CONTROL-M/Tape trace file (TRC) as a program parameter. If you use the standard CTTAFR utility from the IOA.PROC library no changes are necessary, since the TRCBLKS parameter is automatically moved to the utility through the IOASET member in the JCL.

## 3. Support Large Block Interface

The data set block size field (DDSBLK) of the data set record in the Media database (MDB) was increased from two bytes to four bytes. This enables CONTROL-M/Tape to support the new IBM Large Block Interface (LBI) feature.




---

**WARNING**


---

During fallback, data sets that were created with a block size larger than 32,760 bytes will be converted into a block size of 32,760 bytes.

---

## 4. Flag name changes

The INROBOT flag of the volume record that indicates whether the volume resides in an automated tape library has been renamed to INATL. In addition, the TI screen displays this status as “ATL” instead of “Robot”.

The value “EMAS” of the RBTTYPE parameter in CTTARM was changed to “HACC”.

## 5. Cartridge message display information

Cartridge message display information has been consolidated in its own chapter. For further information see the cartridge message display customization chapter of the *CONTROL-M/Tape Implementation Guide*.

## 6. Measurement of data set size

Data set size is the number of kilobytes that were sent to the tape (the uncompressed size), plus the number of kilobytes that were actually written to the tape (the compressed size).

## 7. Volume capacity

Volume capacity is the number of kilobytes that can be written to the volume. To adjust the volume capacity for each media type, set the CAPACITY parameter of the MEDIA definition, located in the CTTPARM member.

## 8. Dynamic data set stacking controlled by rules

Dynamic data set stacking is controlled by online rule parameters. For more information about dynamic data set stacking controlled by rules, see the *CONTROL-M/Tape Implementation Guide*.

---

### NOTE

---



Exit CTTX010 is still supported. However, BMC Software recommends that features previously implemented using the exit now be implemented by rule parameters.

---

## 9. Enhanced Automated Tape Library interface

The robotic library is accessed from the online panels and from the CTTMUP utility, using the IOA Functional monitor, IOAFMON. This monitor is also responsible for a retry mechanism when robotic library requests have failed. For more information about the CONTROL-M/Tape Robotic Library interface, see the *CONTROL-M/Tape Implementation Guide*.

## 10. User Exits

User Exits CTTX002 and CTTX008 were redesigned for the new Robotic Library interface. Review the exit descriptions and adjust your current exits accordingly. For a complete description of each exit, see the source code of the exit.

## 11. Volume record field name changes

In the volume record, the name of the VUSEDKB field has been changed to VUSED, and the name of the VFREEKB field has been changed to VFREE. If you are using either of these fields in a CONTROL-M/Tape utility input statement, such as CTTTRPT, you must use the new field name.

## 12. UNITNAME removed from CTTPARM

The unit name field (UNITNAME) was removed from CTTPARM, and the unit name field (UNITNAME) of the Media database volume record is no longer updated using CTTPARM. Instead, the MVS generic unit name is automatically tracked in the Media database volume record in the UNITGNAM field. In addition, the MVS generic unit name, instead of the unit name, is now displayed in the TI screen Volume-Additional-Information panel.



The STKUNAM field in the Stacking database record now holds the MVS generic unit name instead of the old unit name.

### 13. Exit CTT3495 replaced by exit CTTOAM

If you use an IBM Automated Tape Library (ATL) or IBM Virtual Tape Server (VTS) you should compile exit CTTOAM instead of exit CTT3495. In addition, the RBTTYPE installation parameter should be set to OAM instead of IBMT or SMST.

### 14. TRACE Facility - Using new debugging mechanism

- A. The DBGLEVEL parameter has been removed from the following utilities: CTTIDB, CTTMER, CTTMUP, CTTRTM, CTTSD, CTTSYNC, CTTTPI, and CTTVTM.
- B. The CTTINIT parameters DBGLEVEL(DL) and DBGJOB(DJ) were replaced by TRACELEVEL(TL) and TRACEJOB(TJ) respectively.
- C. All CONTROL-M/TAPE utilities can now use the new debugging mechanism. To activate the TRACE facility and apply it, add the following DD statement to the JCL of the CONTROL-M/TAPE utility you want to trace:

```
//DATRCIN DD *
TRACE=0300:0350
/*
```

### 15. EDM Default Mode Change

The CONTROL-M/Tape interface to External Data Manager (EDM) default mode has been changed from Immediate to Defer.

## CONTROL-M Application Server (CTMAS)

The standalone gateway, ECSGATE, no longer exists. Its functionality has been distributed to IOAGATE and the CONTROL-M Application Server. For more information about IOAGATE, and the configuration of CTMAS in conjunction with IOAGATE, see the IOAGATE chapter in the *INCONTROL for z/OS Administrator Guide*.

Important differences between earlier ECSGATE versions and CTMAS version are described below.

1. CTMAS supports new CONTROL-M fields:
  - CTBRULE
  - CTBSTEPS
  - FORCE OK
2. CTMAS now supports messages in German and French.
3. CTMAS has new and improved tracing levels for detecting rejected updates and performance problems.
4. CTMAS can send group tables, both to the definitions and the active environment of CONTROL-M/Enterprise Manager.

## CONTROL-O

Important differences between earlier CONTROL-O versions and CONTROL-O version 6.3.xx are described below.

- Messages and format of the Rule Definition screen
- Some messages issued by the Rule Definition screen (Screen OR) and the format of statements have been changed. This may affect KSL scripts that look for specific message IDs on the screen.
- The Rule Definitions screen and the Automation Log screen displayed using the `DI A` operator command support the SYSPLEX console name and communication parameters. In-house KSL or KOA scripts that retrieve and manipulate those screens may need modification.
- As of CONTROL-O version 6.1.xx, the Rule Definitions screen now contains the THRESHOLD statement to the general part of the rule. In-house KSL or KOA scripts that retrieve and manipulate those screens may need modification.

# IOA

Major differences between earlier versions of IOA and INCONTROL version 6.3.xx are described below. New features of version 6.3.xx are mentioned throughout this chapter, but not always in full detail. For more information regarding some of these new features of IOA, see the What's New section of the INCONTROL for z/OS 6.3.07 Release Notes.

## 1. INSTxxx libraries

Beginning with version 6.1.xx, INSTxxx libraries are considered base libraries and are not resolved. All jobs submitted during installation must be tailored and their modified members must be saved in a new library, ilprefa.INSTWORK.

A job can also be tailored to reflect updated parameter values by selecting the INCONTROL Installation and Customization Engine (ICE) step, or by performing activity "TAILOR JOB" from the HOUSEKEEPING menu.

## 2. IOA.PARM library

Members from 6.1.xx versions or later, which were located in the IOA.PARM library, are now located in libraries qualified either as IOAENV or PARM. These libraries are concatenated to DD statement DAPARM in the IOAENV member in the IOA PROCLIB.

The PARM library contains few members when supplied. It is populated using ICE with parameter members such as IOAPARM, CTMPARM, and others. These parameter members are now in source format and do not require compiling and linkage.

Use the following members, populated using ICE, to make local changes at your site. These members are not overwritten when maintenance is applied since their contents override supplied defaults.

- The IOADSNL member contains local changes to the list of data sets in the IOADSN member.
- The IOADFLTL member contains local changes to defaults in the IOADFLT member.
- The \$PROFMOD member contains local changes to profile variables in the \$PROFILE member.

## 3. Procedures and jobs

Procedures are located in the PROCLIB and PROCJCL libraries. PROCLIB contains all the procedures used in jobs and PROCJCL contains all the started tasks.




---

**NOTE**


---

Ensure that the PROCJCL library is concatenated to DD statement IEFJOBS in the MSTJCLxx member of the SYS1.PARMLIB library. For more information, see the *INCONTROL for z/OS Installation Guide*.

---

Because most procedures are not copied to the procedure library at a site, the following JCL statements were added to the jobs in various JCL libraries:

```
//JCLLIB ORDER=ilprefa.PROCLIB
//INCLUDE MEMBER=IOASET
```

The IOASET member in the IOA PROCLIB library is built by ICE and contains the values for all the parameters used in procedures and jobs.

Because some procedures from the PROCLIB library are copied to the user's procedure library, there is no need to add JCLLIB and INCLUDE statements in the user's jobs. The procedures are copied and optionally renamed, and DSNAME is entered into the ICE variable SITEPROC during installation. This allows the user to use jobs from earlier INCONTROL versions without change.

IOAENV is another important member (built by ICE) in the IOA PROCLIB library. It specifies the libraries in DD statements STEPLIB and DAPARM and can be used to concatenate additional site libraries to both DD statements.

#### 4. Euro support

The IOA default translation tables, contained in IOA Exit IOAX037, have been modified to support the Euro monetary symbol.

#### 5. JCL and ALC members

Since version 6.1.xx introduced a new infrastructure, old JCL and ALC members in the IOA.PARM library can no longer be used. For more information on the new IOA infrastructure, see the IOA Administration chapter in the *INCONTROL for z/OS Administrator Guide*.

#### 6. Source parameters

All parameter members such as IOAPARM and CTMPARM are now in source format that eliminates the need for compiling and linking. ICE builds the parameter members and places them in the IOA.PARM library.

Make all changes to parameter members using ICE. Since the ICE parameter repository is based upon these members all changes to them are reflected in the ICE tables.

In earlier versions, parameters, including those in the IOAPARM member, were accessed by a program by loading it into virtual storage. The IOAPARM member must be accessed using macro IOAENV. Users who have application programs that require access to the IOAPARM member, must use this macro instead of loading the IOAPARM member. For more information about the IOAENV macro, see Appendix F of the *INCONTROL for z/OS Administrator Guide*.



#### NOTE

The DUALRES parameter has been removed from the IOAPARM member. The DUALDB parameter has been moved from the CTMPARM member to the IOAPARM member. See the section of the *INCONTROL for z/OS Installation Guide* that describes IOA data set characteristics.

### 7. Optional wishes

The optional wishes for IOA and INCONTROL products that were set using the IOADFLTC macro are now in source format (compilation not needed) in the IOADFLT member in the IOAENV library.

Wishes are set in the “Customize IOA Defaults” major step, under ICE Customization. The modified wishes are saved in the IOADFLT member in the IOA.PARM library.

Most of the optional wishes for CONTROL-M and CONTROL-M/Restart are included in the CTMPARM and CTRPARM source parameter members. For more information, see the customization chapter of the *INCONTROL for z/OS Installation Guide*.

### 8. New IOA Conditions file

The old IOA Conditions/Resources file has been split into two separate files; the IOA Conditions file (CND), and the CONTROL-M Resources file (RES). The standard DD statement DACNDF now points to the IOA CND file. For more information about the new RES file, see the CONTROL-M chapter of the *INCONTROL for z/OS Administrator Guide*.

### 9. KSL scripts

KSL scripts reside in the IOA KSL and IOA SAMPLE libraries. The standard KSL procedure uses the KSL library in the DACALL DD statement.

Many screens have been changed in version 6.3.xx. All supplied KSLs have been modified to reflect those changes; therefore customers should no longer use KSLs from earlier versions.

User written or customized KSLs must be carefully checked to make any necessary changes based on the appropriate screen changes. In most of the screens the condition's Date field has moved, so special care must be taken with regard to KSLs accessing conditions and the date of the condition.

#### 10. User exits and I/O

The IOAMEM module is now used in place of CTMMEM in user created exits. For more information about this module, see the appendix that discusses assembler macros in the *INCONTROL for z/OS Administrator Guide*.

#### 11. IOA Global AutoEdit Variables database

A new set of files allows the sharing of variables between INCONTROL products (currently CONTROL-M and CONTROL-O only).

In Sysplex environments, variables are shared between INCONTROL products whose MVS images are members of the Sysplex.

An online facility creates and updates the source database IOAVAR using screen IV, and requires that either the CONTROL-O or CMEM monitor be active.

## IOAGATE

IOAGATE and the CONTROL-M Application Server work together and have taken over the functionality of the standalone gateway, ECSGATE. For more information about IOAGATE, and the configuration of CTMAS in conjunction with IOAGATE, see the IOAGATE chapter in the *INCONTROL for z/OS Administrator Guide*.

Important differences between earlier IOAGATE versions and IOAGATE version 6.3.xx are described below.

- As of version 6.1.xx, with the appropriate fixes, IOAGATE supports Sysplex Distributor for CONTROL-D/Page on Demand application
- As of version 6.1.xx support for CONTROL-D/WebAccess and support for application server address space sharing have both been removed.

## Utility comparisons

In the course of development, new utilities are added, old utilities are renamed or deleted, and the functionality of certain utilities is transferred to other operations. [Table 27](#) illustrates these changes.

Table 27 Utility comparison table

Utility name	Present in version 6.1.xx	Present in version 6.2.xx	Present in version 6.3.xx
CTDAUTR	NO	NO	YES
CTDUFprt	NO	YES	YES
CTDUPTR	NO	NO	YES
CTMCsMF	NO	NO	YES
CTMMAJF	NO	YES	YES
CTMRAFL	YES	Obsolete – Functionality now within CTMRFLW	
CTMRFLW	YES	Replaces obsolete utility CTMRAFL	
CTMTLB	NO	YES	YES
CTOUSMDSC	YES	YES	NO
CTOOEDSC			Replaces obsolete utility CTOUSMDSC
CTTIDB	REPAIR mode added in, and available retroactively from, version 6.2.xx		
CTTRLPT	Added in, and available retroactively from, version 6.2.xx		
CTVACDB	NO	YES	YES
DEFSTAT	NO	YES	YES
FORMAS4	NO	YES	YES
FORMDRES	NO	YES	YES
IOACLVL	NO	NO	YES
IOACMPP	NO	NO	YES
IOAPSCK	NO	NO	YES





# Falling back from a full upgrade

This appendix describes how to return to your previous version after a full upgrade to version 6.3.xx. It contains the following topics:

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# Overview

Preparation for a possible fallback starts during the upgrade process and continues during the first week or two of production in the new environment after the migration (the transition period). The following guidelines will help you during the transition period:

- Avoid updating or making changes to exits, rules, missions or jobs.
- Keep the previous installation files on disk and cataloged during the transition period.
- Keep a log of changes made during the upgrade and the transition period.

If you did the above, falling back to your previous version will be considerably easier.

## Fallback steps

To fall back to your previous version, perform the steps in this section.

### Step F1: Stop all IOA activities

Stop the monitor or job that connects to the components that you want to fall back to an earlier version.

Read all documentation about stopping IOA activities and prepare your fallback plan. Depending on your site configuration, you may have to perform an IPL.



---

#### **WARNING**

---

If several INCONTROL products are installed, stop all IOA activities for all products before starting the fallback phase. This is essential because all products share the same database. (For example, all products share the same IOA Conditions file and IOA Log file.)

---

To stop all IOA activities, do the following:

#### **1** Terminate online sessions

Terminate all IOA Online sessions, such as TSO, ROSCOE, IOA Online monitor, and the IOA VTAM monitor.

## 2 Stop initiators

If the JCL of production jobs runs an IOA utility or report, stop the JES initiators that handle such jobs during the fallback phase. Similarly, ensure that long-running address spaces and online services do not invoke IOA services.

## 3 Stop functions

Ensure that functions of CMEM, CDAM, and CONTROL-O are not used during the fallback phase.

- A. Stop JES initiators that handle production jobs that use CDAM files.
- B. Ensure that occasional production jobs whose arrival may be acknowledged by either CMEM or CONTROL-O are not submitted on any CPU on which CMEM or CONTROL-O is active.
- C. Stop JES initiators that handle production jobs that may trigger events in CMEM or CONTROL-O.
- D. Stop started tasks or log off all TSO users that may trigger events in CMEM or CONTROL-O.

## 4 Stop tasks

Stop all tasks that allocate IOA files either by DD statements or by dynamic allocation.

## 5 Stop all CONTROL-O activity

- A. For each CONTROL-O or CMEM monitor that is part of your environment, stop the monitor by executing one of the following operator commands, and wait until the monitor address space and its dependent address spaces (CONTROL-O servers) terminate

- `F controlo`
- `STOP`
- `P controlo`

In the commands listed above, *controlo* is the name of the CONTROL-O or CMEM monitor.

- B. Stop the CONTROL-O Application Server by executing the `P CTOAS` operator command and wait for shutdown.

## 6 Stop all CONTROL-M activity

For each CONTROL-M monitor that is part of your environment, stop the monitor by executing the `P controlm` operator command, and wait until the monitor address space terminates.

In this command, *controlm* is the name of the CONTROL-M monitor. In a CTMPLEX configuration, BMC Software recommends first stopping the Local Sysplex Monitors (LSM) and then stopping the Global Sysplex Monitor (GSM).

## 7 Stop all CONTROL-D activity

Stop the CONTROL-D monitor that is part of your environment, stop the monitor by executing the `P controld` operator command, and wait until the monitor address space and all of its dependent address spaces (Print Monitors) terminate.

In this command, *controld* is the name of the CONTROL-D monitor.

## 8 Stop all CONTROL-V activity

Stop IOA Archive Server activities by executing the `F IOASMON, STOP` operator command and wait for shutdown of the server.

## 9 Stop all CONTROL-M/Analyzer activity

- Do not invoke CONTROL-M/Analyzer batch rules.
- Do not enter CONTROL-M/Analyzer online screens.
- Do not run user application programs that invoke CONTROL-M/Analyzer rules.

If CONTROL-M/Analyzer is running with a CONTROL-M or CONTROL-D monitor, stop the monitor.

## 10 Stop all CONTROL-M/Tape activity

A. Stop all tape activity.

B. Take CONTROL-M/Tape down by using the `S CTTINIT, PARM=TERM` operator command and wait for termination of CONTROL-M/Tape.

---

### NOTE

If you run a previous version of CONTROL-M/Tape parallel to the CONTROL-M/Tape current version, you must shut down both versions.

---



C. If you are using the optional IOA Functional Monitor, stop the IOA Functional Monitor, IOAFMON.

**11 Stop IOAGATE**

For each IOA Gateway that is part of your environment, stop the gateway by executing the `P ioagate` operator command, and wait until the gateway address space and all of its dependent address spaces (Application Servers) terminate.

In this command, *ioagate* is the name of the IOA Gateway.

**12 Inhibit automatic startup of INCONTROL products during IPL (optional).**

Edit the `COMMNDxx` member in the `SYS1.PARMLIB` operating system library and remove all commands that start IOA activities.

Any activities that you stop during this step must not be restarted until you have done the following:

- completed “[Step 38. Disconnect the IOA subsystem](#)” through “[Step 40. Migrate the IOA component](#)” on page 59
- performed additional fallback steps for the components that are linked to the activities that you stopped (beginning with “[Step 41. Migrate CONTROL-M](#)” on page 63)
- started CONTROL-O or CMEM again, if they are part of your environment

## Step F2: Disconnect the IOA subsystem

If APAR WI2229 (which is part of maintenance 6.x.16) is installed, there is no need to disconnect the IOA subsystem during fallback. Otherwise, any fallback of a component that uses the IOA subsystem requires you to disconnect the IOA subsystem and restart the other components.

Use the following command when it is necessary to disconnect the IOA subsystem:

```
S IOASDISC,SSNAME=ioa_subsystem
```

IOASDISC is release-independent.

## Step F3: Back up the version 6.3.xx environment

For IOA and all INCONTROL products, make backups of the following:

- Installation libraries
- Operational libraries
- IOA core and INCONTROL product repositories

## Step F4: Review definition libraries

Review all definition libraries and members that you copied from the previous version to version 6.3.xx during the upgrade.

If you changed any definitions, exits, or JCL procedures, after migrating to version 6.3.xx, consider applying the changes to your previous system.

In particular, check

- the detailed site upgrade plan
- the upgrade change log
- the transition period change log
- the table of libraries in step 35
- other “Migrating” steps

Also, check the following date control record members for CONTROL-M, CONTROL-D, or CONTROL-M/Analyzer:

- CONTROL-M New Day procedure and User Daily jobs (list of libraries and tables)
- CONTROL-D New Day procedure and User Daily jobs (list of libraries and tables)
- CONTROL-D PARM members
  - Lists of missions
  - Recipient Tree definitions
  - Generic User lists
- CONTROL-V list of migration missions
- CONTROL-O rule list in the PARM library
- CONTROL-M/Analyzer list of missions in the PARM library and rules
- CONTROL-M/Tape rules, rule list, vault definition and pool definition members.

## Step F5: IOA fallback

- 1 Restore the IOA component and INCONTROL product procedures.

If during the upgrade process you replaced the previous version procedures with version 6.3.xx procedures as recommended, you need to restore the previous version procedures.

If the prefix of the procedures is different in the two versions, make sure that all production jobs refer to the previous version environment.

Restore the started task procedures to the previous version's contents.

- 2 Restore locally developed KSLs.
- 3 Restore locally developed exits and security modules.
- 4 Restore the previous security definitions. Ensure that the security definitions used in previous version are in effect.
- 5 Put the previous IOA and CONTROL-M, CONTROL-M/Restart, CONTROL-D, CONTROL-V, CONTROL-O, CONTROL-M/Analyzer and CONTROL-M/Tape online interfaces, CLISTs, ISPF panels, ISPF tables, ISPF skeletons, and ISPF messages into effect for all IOA users. This can be done in one of the following ways:
  - Concatenate the previous IOA libraries to the appropriate DD statements in the appropriate TSO LOGON procedures.
  - Copy the previous version's IOA libraries to libraries that are automatically referenced by the appropriate TSO LOGON procedures.
- 6 Restore the IOA Conditions file.

If you are falling back to your previous version you must restore the IOA Conditions/Resources file from the backup that was saved in [“Step 36. Back up libraries and repositories” on page 55](#).

- 7 Restore the IOA Manual Conditions file by copying the IOA version 6.3.xx Manual Conditions file to the previous version's file.

## Step F6: CONTROL-M fallback

In general, it is not necessary to restore CONTROL-M databases because of CONTROL-M Minus-One Support (for details, see Chapter 1 in the *CONTROL-M for z/OS User Guide*). However, certain exceptions and cautions must be observed as detailed below:

- If any job scheduling definitions were saved and you are falling back to a version earlier than 6.2.xx, then the affected job scheduling library of the earlier version must be restored because of certain incompatibilities.
- No substantive changes exist in the Job Definition screen (screen 2) between versions 6.2.xx and 6.3.xx. Therefore, there are no fallback issues in regards to screen 2.

However, for users wanting to fallback to 6.1.xx or earlier, some fields or parameters that were defined in 6.2.xx or above are not supported or have different definitions in the previous versions. For example, inverted conditions, which were introduced in version 6.1.xx, behave differently in version 6.0.xx. The DAYS offset and STAT CAL parameters, which were introduced in 6.2.xx, disappear in the fallback version. Performing a SAVE on a job definition in which parameters have disappeared in a fallback version causes these parameters to be permanently lost, even when CONTROL-M is restored to its upgraded version.

- If you have modified global control parameters in IOAPARM or CTMPARM members (in the IOA.PARM library), changes would be required when falling back from 6.3.xx to a previous version. For example, enlarging the 6.3.xx AJF file and reverting back to a previous version, would result in a mismatch of the AJF size between the CTMPARM AJF size value of the earlier version and the actual physical file size of the AJF.

Similarly, installing 6.3.xx with a different QNAME, and then falling back to a previous version would create a mismatch in the QNAME IOAPARM of the earlier version and the QNAME imbedded in various product components.

### 1 Restore the CMEM environment

- A. Restore the copy of the CMEM rules table.
- B. Reformat the previous set of CMEM communications files.

### 2 Adjust Date Control records

Copy all date records (meaning, all members that start with the DATEREC prefix) from the version 6.3.xx CONTROL-M PARM library to the previous CONTROL-M PARM library.

## Step F7: CONTROL-M Application Server (CTMAS) fallback

### 1 Restore the CONTROL-M Application Server procedure.

If during the upgrade process you replaced the previous version procedure with the version 6.3.xx procedure as recommended, you must restore the previous version procedure.

If the prefix of the procedure is different in the two versions, make sure that the production job refers to the previous version environment.

### 2 QNAME and M2G file considerations



Installing version 6.3.xx with a different QNAME, and then falling back to a previous version creates a mismatch between the previous version QNAME in IOAPARM and the QNAME imbedded in the M2G file.

## Step F8: CONTROL-D and CONTROL-V fallback

### 1 Restore the CONTROL-D and CONTROL-V Repository.

#### A. Restore the User Reports List files

To restore the User files, use the CTDUFDUL job from the CTD JCL library to unload the files from the current release. Use the CTDUFRST job to restore those files to the previous version.



#### NOTE

Restoration of the User Reports List files is not mandatory if upgrading from 6.2.xx to 6.3.xx. If you use the same naming convention and IOA QNAME for User Reports List files in both 6.2.xx and 6.3.xx, you may omit this step

- B. Format the Active Missions file of the previous version of CONTROL-D using the FORMAMF job in the previous IOA INSTWORK library.
- C. Format the Active Transfer file of the previous CONTROL-D version using the FORMATF job in the IOA INSTWORK library of that version.

### 2 CONTROL-D version 6.3.xx mission definition members are not usable by the earlier version. Therefore, you must use mission definition members of the previous version. If you changed these members in CONTROL-D version 6.3.xx, reapply the changes to the members of the previous version.

### 3 Adjust Date Control records.

Copy all date records (meaning, all members that start with the DDAT prefix) from the version 6.3.xx CONTROL-D PARM library to the previous CONTROL-D PARM library.

### 4 Ensure that the security definitions that were used in the previous version are in effect.

## Step F9: CONTROL-O fallback

- 1 Use the saved copy of CONTROL-O rules.

If you defined new rules in version 6.3.xx, define them in the restored environment. Make sure you remove version 6.3.xx features.

- 2 Restore the previous Automation Log file.
- 3 Restore the previous SOLVEWARE libraries.
- 4 Restore the CONTROL-O global variables database files.
- 5 Issue the following command:

```
RUN IOASDISC,SSNAME=ioa_subsystem
```

## Step F10: CONTROL-M/Analyzer fallback

This performs fallback to any original version 6.1.xx or later format.

- 1 If you modified rules in version 6.3.xx, apply the modifications to rules in the previous version of CONTROL-M/Analyzer.
- 2 The database structure is the same among all supported versions. You only need to restore the previous CONTROL-M/Analyzer Repository, and no conversion is needed. Once you have restored the repository, you must adjust the data set name (external and internal in record #0 in each file) and the QNAME parameter (internal in record #0), in each restored file. For a list of data sets that must be restored and adjusted, refer to [Table 23 on page 75](#).

You must zap the following fields in the files referred to in the table below:

Field	Offset	Length (in characters)
QNAME	1C	8
FILE NAME	2C	44

- 3 Mission definition members of CONTROL-M/Analyzer version 6.3.xx can be accessed by earlier versions of CONTROL-M/Analyzer. Therefore, the existing mission definition members can be used. If you changed these members in CONTROL-M/Analyzer version 6.3.xx, apply the changes to the members of the previous version.
- 4 Adjust Date Control Records.

Copy all date records (meaning, all members that start with the DDAT prefix) from the new CONTROL-M/Analyzer PARM library to the previous CONTROL-M/Analyzer PARM library.

- 5 Ensure that the security definitions used in previous version are in effect.

## Step F11: CONTROL-M/Tape fallback

- 1 Update Rules.

Adjust the rule definitions in the Rules library of the previous versions to be identical to those of version 6.3.xx.

The rule members of CONTROL-M/Tape version 6.3.xx cannot be copied as they are to the Rules library of the previous version since they have a different structure.

- 2 Update Rule list.

Update the Rule List members of the previous CONTROL-M/Tape version (default member: RULLIST in the CONTROL-M/Tape PARM library) to point to all required rule members.

- 3 Update pool definitions.

Adjust the pool definitions (default member: \$\$POOL in the CONTROL-M/Tape PARM library) of the previous version of CONTROL-M/Tape to be identical to those of CONTROL-M/Tape version 6.3.xx.

The pool definition members of CONTROL-M/Tape version 6.3.xx can be copied, as is, to the pool definition member of the previous version.

- 4 Update vault definitions.

Adjust the vault definitions (default member: \$\$VAULT in the CONTROL-M/Tape PARM library) of the previous version of CONTROL-M/Tape to be identical to those of CONTROL-M/Tape version 6.3.xx.

The vault definition members of CONTROL-M/Tape version 6.3.xx can be copied, as is, to the Vault Definition library of the previous version.

- 5 Format the Media Database of your earlier version.

**A** Before migrating the version 6.3.xx Media Database to your earlier version Media Database, the data and index components of the earlier version Media Database must be formatted and empty.

**B** When falling back to 6.0.xx:

- Edit the CTTCMDB member in the INSTWORK library of the earlier version. This job allocates and formats the data and index components of the Media Database of the earlier version. Verify that the values that set the size of the Media Database are correct.

When falling back to version 6.1.xx or 6.2.xx:

- Edit the CTTMDBD and CTTMDBI members in the INSTWORK library of the earlier version. Verify that the values that set the size of the Media Database are correct. The job CTTCMDB allocates and formats the data and index components of the Media Database of the earlier version.

---

**WARNING**

---



Before you submit this job, verify that it formats components of the earlier version Media Database, and not components of the version 6.3.xx Database.

---

**C** Submit the job and verify that all job steps ended with a condition code of 0.

## 6 Migrate the Media Database.

**A** For fall-back to version 6.1.xx or version 6.2.xx, perform the following actions:

1. In the 6.3.xx environment, use the IOADUL utility to unload the 6.3.xx MDB into a flat file.
2. In the fall-back environment (6.1.xx or 6.2.xx), use the IOADLD utility to load the flat file back to the fall-back MDB.
3. In the fall-back environment, use the CTTBIX utility to rebuild the index.

**B** For fall-back to version 5.x.xx or version 6.0.xx, perform the following steps:

1. In the HOUSEKEEPING appendix of ICE, use the Tailor Job step to edit job C610T5xx (for fall-back to version 5.x.xx) or job C610T600 (for fall-back to version 6.0.xx).
2. Replace the data set name in the lines marked by the comment  
`<<=== CHANGE,` with the actual data set names, as shown in [Table 28](#).

**Table 28** CONTROL-M/Tape fallback data set names

Name	Description
OLD.VERSION.IOA.LOAD	Data set name of the previous IOA LOAD library version.
OLD.VERSION.MDBD	Data set name of the previous Media Database data component version.
OLD.VERSION.MDBI	Data set name of the previous Media Database index component version.

**NOTE**

Before you continue, change all occurrences of these file names.

3. Submit the job and verify that all job steps ended with a condition code of 0.

For information about the return codes of the CTTBDC program that is activated in this job, see [Table 29](#).

**Table 29** Return codes of the CTTBDC program

Code	Description
00	Operation performed successfully.
04	CONTROL-M/Tape is active (processing continues). If this return code is issued during conversion for test purposes, it does not indicate an error.
12	Loading CONTROL-M/Tape environment failed.
16	Open error. Message CTT390S, issued with this error, contains the DD statement for the file that could not be successfully opened.
20	Invalid record length (LRECL) for DD statement DAIN or DAOUT. The valid record length for DD statement DAIN is 660. The valid record length for DD statement DAOUT is 460/600.

**NOTE**

Data set size and volume capacity are not converted back from kilobytes (KB) to feet. Therefore, BMC Software recommends that you stop all dynamic data set stacking activity in the restored environment.

Data sets with a block size larger than 32,760 that were created during the new version upgrade, using the IBM Large Block Interface feature, will be migrated with a block size of 32,760.

- 7 Run the CTTVTM utility in your previous version, with TYPEVLT MODE=SLOTBLD, then with TYPEVLT MODE=BOXBLD, in order to rebuild the slot and box records in the database of your previous version.

**NOTE**

Do not use INCLUDE or EXCLUDE statements while running the CTTVTM utility in these MODEs.

- 8 If falling back to versions earlier than 6.0.xx, copy the CTTS500 module to the LINKLIST. If falling back to version 6.0.xx or later, skip this step.

## 9 CONTROL-M/Tape SVC

Read carefully the description of CONTROL-M/Tape SVC installation in the CONTROL-M/Tape chapter of the *INCONTROL for z/OS Installation Guide* of the version to which you are falling back. Then decide whether you want to install Static or Dynamic SVC.

The actions that you need to perform are dependent on both the type of the SVC you had in the version 6.3.xx environment and the type of SVC you want to have in the version to which you are falling back.

**Table 30 CONTROL-M/Tape SVC fallback**

From: To:	Dynamic SVC in CONTROL-M/Tape version 6.3.xx	Static SVC in CONTROL-M/Tape version 6.3.xx
Dynamic SVC in previous CONTROL-M/Tape versions	No action required.	Edit the IEASVCxx member in the SYS1.PARMLIB member and delete the following line:  SVC Parm n,REPLACE,TYPE(4),APF(NO)  where <i>n</i> is the SVCNUM that was used in version 6.3.xx.  IPL the system.
Static SVC in previous CONTROL-M/Tape versions	Do all the steps for static SVC that are described under “CONTROL-M/Tape SVC Installation” in the CONTROL-M/Tape chapter of the previous version of the <i>INCONTROL for z/OS Installation Guide</i> .  IPL the system.	Edit the IEASVCxx member in the SYS1.PARMLIB member and delete the following line:  SVC Parm n,REPLACE,TYPE(4),APF(NO)  where <i>n</i> is the SVCNUM that was used in version 6.3.xx  Perform all the steps for static SVC that are described under “CONTROL-M/Tape SVC Installation” in the CONTROL-M/Tape chapter of the previous version of the <i>INCONTROL for z/OS Installation Guide</i> .  IPL the system.

## 10 CONTROL-M/Tape Operating System Interfaces

Read the description of CONTROL-M/Tape Operating System Interfaces in the CONTROL-M/Tape chapter of the *INCONTROL for z/OS Installation Guide* of the version to which you are falling back. Then decide whether you want to install Static or Dynamic Operating System Interfaces.



### NOTE

In this step, IPL means IPL CLPA.

The actions that you need to perform depend on both the type of operating system interfaces that you had in the earlier version environment and the type of operating system interfaces that you want to have in the version to which you are falling back. These are illustrated in [Table 31](#).

**Table 31** CONTROL-M/Tape operating system interface fallback

From: To:	Dynamic operating system interfaces in CONTROL-M/Tape version 6.3.xx	Static operating system interfaces in CONTROL-M/Tape version 6.3.xx
Dynamic Operating System Interfaces in previous CONTROL-M/Tape versions	<ul style="list-style-type: none"> <li>■ No action required.</li> </ul>	<ul style="list-style-type: none"> <li>■ Restore Operating System CSECTs (IFG0194F, IFG0195H, IFG0196Q, IFG0552B, IFG0202J, IFG0553H, IFG0552F, IFG0195B, and IFG0194K) to the latest operating system level without CONTROL-M/Tape interfaces in them.</li> <li>■ IPL the system.</li> </ul>
Static Operating System Interfaces in previous CONTROL-M/Tape versions	<ul style="list-style-type: none"> <li>■ Perform all the steps that are described under “CONTROL-M/Tape MVS Interfaces” for “Static Interfaces” in the CONTROL-M/Tape chapter of the previous version of the <i>INCONTROL for z/OS Installation Guide</i>.</li> <li>■ IPL the system.</li> </ul>	<ul style="list-style-type: none"> <li>■ Restore Operating System CSECTs (IFG0194F, IFG0195H, IFG0196Q, IFG0552B, IFG0202J, IFG0553H, IFG0552F, IFG0195B and IFG0194K) to the latest operating system level without CONTROL-M/Tape interfaces in them.</li> <li>■ IPL the system.</li> </ul> <p>Perform all the steps that are described under “CONTROL-M/Tape MVS Interfaces” for “Static Interfaces” in the CONTROL-M/Tape chapter of the previous version of the <i>INCONTROL for z/OS Installation Guide</i>.</p> <ul style="list-style-type: none"> <li>■ IPL the system.</li> </ul>

- 11** Migrate the CONTROL-M/Tape Stacking Database.
- 12** Make sure all external exits are used from the old IOA LOAD library. For example, if you are using OAM, make sure CBRUXENT, CBRUXEJC, CBRUXCUA, and CBRUXVNL from the old IOA LOAD library reside in the LINKLIST.
- 13** Make sure all manual allocations for the IOA LOAD library are changed to the old ones. For example, if you are using DFSMS*hsm* and the IOA LOAD library is concatenated to the STEPLIB of an DFSMS*hsm* procedure, then edit the procedure to make sure that the old IOA LOAD library will be used.

## Step F12: Activate the restored environment

Review the instructions in “[Step 50. Restart IOA activities](#)” and “[Step 51. Final adjustments](#)” in [Chapter 2, “Full Upgrade,”](#) regarding the version to which you are falling back.

Perform any necessary adjustments and restart any stopped IOA components, or perform an IPL and have them started automatically.



# Running two CONTROL-M/Tapes in parallel

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# Overview

This appendix describes how to run CONTROL-M/Tape version 6.3.xx in Test mode while running an earlier CONTROL-M/Tape version in Production mode on the same CPU.

The second half of this appendix contains information about External Data Manager (EDM) support while running the two versions in parallel.



---

**NOTE**

The procedure described below is relevant only for the combination of CONTROL-M/Tape version 6.3.xx and an earlier CONTROL-M/Tape version. Different instructions are provided for each prior version of CONTROL-M/Tape.

---

Working with your prior CONTROL-M/Tape version in Production mode while running CONTROL-M/Tape version 6.3.xx in Test mode enables you to test version 6.3.xx as part of the upgrade process.

When two versions are working in parallel, output such as vaulting and retention management reports can be compared on a daily basis to ensure that CONTROL-M/Tape version 6.3.xx provides information that is consistent with the information provided by the earlier CONTROL-M/Tape version. Most of the new features supplied with version 6.3.xx can also be examined while working in parallel Test mode.

Throughout the test period, shutting down CONTROL-M/Tape 6.3.xx while the production CONTROL-M/Tape continues to operate can create differences in the Media Databases, making reports inconsistent. This sort of inconsistency may make it necessary to reconvert the production Media Database (in the earlier version) for use as a test Media Database (in version 6.3.xx).

To facilitate comparison of the output from the two systems, BMC Software recommends that both systems start with the same Media Database contents. Therefore, although it is not always necessary to stop the earlier CONTROL-M/Tape version to start version 6.3.xx in parallel, BMC Software recommends that you stop tape processing before performing database conversion from the earlier version to version 6.3.xx.

When the testing period is over and you want to continue working with only version 6.3.xx CONTROL-M/Tape, parallel execution support must be removed. The following paragraphs describe how to install and remove parallel execution support.

# Installing parallel execution support

To install CONTROL-M/Tape parallel execution support, do the following:

1. Shut down CONTROL-M/Tape version 6.3.xx.

If CONTROL-M/Tape version 6.3.xx is active, bring it down using the following operator command:

```
S xxxINIT,PARM=TERM
```

where xxx is the procedure prefix selected during CONTROL-M/Tape version 6.3.xx installation.

2. Set CTTARM parameters in version 6.3.xx using the **Customization (Post installation customization)** option in the INCONTROL Installation and Customization Engine (ICE):

Parameter	Minor step in major step 1 of Customization
MODET=TEST	Minor step 1 - Initialization Parameters
PARALLEL=S	Minor step 1 - Initialization Parameters
RBTTYPE=NONE	Minor step 10 - Automated Tape Libraries

Ensure that the SVC number for version 6.3.xx (the SVCNUM parameter in the CTTARM member) is different from the SVC number used by the earlier version. Identical SVC numbers produce unpredictable results.

3. Prepare production CONTROL-M/Tape environment for the version you are upgrading from.

Ensure that the following parameter value is already set in the CTTARM member of the version you are upgrading from:

```
PARALLEL=N
```

4. Start CONTROL-M/Tape version 6.3.xx by using the following operator command:

```
S xxxINIT
```

In this command, xxx is the procedure prefix selected during CONTROL-M/Tape version 6.3.xx installation.

## Removing parallel execution support

When you finish testing the two versions in parallel, you must remove the changes applied by the above procedure. The following steps describe how to remove the relevant changes:

1. Shut down CONTROL-M/Tape version 6.3.xx.

If CONTROL-M/Tape version 6.3.xx is active, bring it down using the following operator command:

```
S xxxINIT,PARM=TERM
```

where xxx is the procedure prefix that you selected during CONTROL-M/Tape version 6.3.xx installation.

2. Set CTTPARM parameters in version 6.3.xx.

Set the following parameters in the version 6.3.xx CTTPARM member:

```
MODET=PROD  
PARALLEL=N  
RBTYPE=(according to site configuration)
```

---

### **NOTE**



After you remove parallel execution support, only one CONTROL-M/Tape system can be active in each system. Running two systems in parallel without the required support can cause unpredictable results.

---

## EDM support for running CONTROL-M/Tape version 6.3.xx and an earlier CONTROL-M/Tape version in parallel

The following paragraphs describe how to modify the External Data Manager (EDM) so that both versions work in parallel.

The interface between an EDM and CONTROL-M/Tape is achieved using a Tape Volume exit of the EDM. Sample Tape Volume exits for interfacing with each type of EDM are supplied with the installation tape.

When more than one CONTROL-M/Tape version runs at the same time (for example, in parallel), the Tape Volume exits that interface with each version must be modified so that they perform the same functions. This ensures that the two databases are updated and kept synchronized.

---

**NOTE**


---



The text shown below is a general description of CONTROL-M/Tape EDM support during parallel execution. For more information about support for specific EDMs, see “External Data Manager Support” in the *CONTROL-M/Tape Implementation Guide*.

---

## Installing parallel EDM support with earlier CONTROL-M/Tape versions

The Tape Volume exit that is currently used must be changed in order to support activation of version modules in the version you are upgrading from and in the current version.

---

**NOTE**


---



Ignore the source exit header remarks in the earlier CONTROL-M/Tape version. Those remarks may be different from the instructions below.

---

Modify the Tape Volume exit source as follows:

1. Create a load module of the version 6.3.xx Tape Volume exit.

Use the ICE Automatic Exit Installation Tool (described in the Exits chapter of the *INCONTROL for z/OS Administrator Guide*) to compile and link the version 6.3.xx Tape Volume exit. For example, for an DFSMSHsm interface, compile the ARCTVEXT source exit.

2. Rename the module created in the 6.3.xx IOA LOAD library in the previous step, in accordance with [Table 32](#).

**Table 32** Exit name revisions

EDM interface	Standard exit name	Renamed exit
DFSMSHsm	ARCTVEXT	ARCTVEXN
A-Disk	TMSCTLEX	TMSCTLEN
CA-ASM2	SFTEXTIT	SFTEXTIN
ExHPDM	SOVCTTEX	SOVCTEXN

3. Recreate the load module of the old CONTROL-M/Tape version Tape Volume exit, as follows:

- A. First, save a copy of the prior Tape Volume exit for backup.

Your earlier CONTROL-M/Tape version is supplied with an exit for parallel processing. Use [Table 33](#) to find the relevant parallel exit you need to compile.

**Table 33 Parallel support exit table**

EDM interface	Standard exit name	Parallel support exit name
DFSMSHsm	ARCTVEXT	ARCTPRLL
CA-Disk	TMSCTLEX	TMSCPRLL
CA-ASM2	SFTEXT	AS2FPRLL
ExHPDM	SOVCTTEX	SOVCPRL

- B. Compile the exit using the instructions in the External Data Managers chapter of the *CONTROL-M/Tape Implementation Guide*. Ensure that you compile it in the previous CONTROL-M/Tape environment. This means using the previous CONTROL-M/Tape version macro libraries, and the output module created in the previous CONTROL-M/Tape version IOA LOAD library.
4. Use the information in [Table 34](#) to add to the EDM procedure a DD statement that references the version 6.3.xx IOA LOAD library. The EDM must be stopped and restarted for this change to take effect. The STEPLIB in the EDM procedure will continue to reference the old IOA LOAD library, as it was before the parallel support

**Table 34 IOA LOAD library DD names**

Previous CONTROL-M/Tape version	DD name for parallel support
6.1.xx	LOADPRLL
6.2.xx	LOADPRLL

## Removing parallel EDM support with CONTROL-M/Tape

When you finish testing and want to work with only version 6.3.xx CONTROL-M/Tape, remove parallel execution support by doing the following:

1. Remove the version 6.3.xx IOA LOAD library from the EDM procedure by commenting out the DD statement added at step 4. of the procedure for installing parallel EDM support, on [page 198](#).
2. Change the STEPLIB in the EDM procedure to reference to the IOA LOAD library of version 6.3.xx.

3. Rename the EDM module in the IOA LOAD library of version 6.3.xx back to its standard name. Use [Table 32](#) for guidance.





# Incremental upgrade cleanup libraries and files

The following tables list the files that were created by the installation of the current release and the upgrade from the previous version, as described in [Chapter 3](#), “Incremental upgrade”.



## NOTE

In the following tables, files marked with Y can be deleted from your system after the current release has been set to CR mode.

## IOA libraries and files

Table 35 IOA base libraries

Type	JCL prefix parameters	Description	Primary Production Environment files	Pilot Environment files
GENERAL	&BASEPREF	IOA General (Miscellaneous) library – fixed length record (80)	Y	
GENERALV	&BASEPREF	IOA General (Miscellaneous) library – variable length record	Y	
GENRL132	&BASEPREF	IOA General (Miscellaneous) library – fixed length record (132)	Y	
MAINTLIB	&BASEPREF	IOA Maintenance library	Y	
PROCJCL	&BASEPREF	IOA Started Task library	Y	

**Table 36 IOA installation libraries**

Type	JCL prefix parameters	Description	Primary Production Environment files	Pilot Environment files
CICSSAMP	&ILPREFA	IOA CICS library	Y	
CLIST	&ILPREFA	IOA CLIST library	Y	
CTTRANS	&ILPREFA	“C” Transient library	Y	
DOC	&ILPREFA	Documentation members (for exits and so on)	Y	
INSTWORK	&ILPREFA	Installation work library	Y	
IOAENV	&ILPREFA	IOA Environment Parameter library	Y	
ISMSGENG	&ILPREFA	IOA ISPF Message library (English)	Y	
ISMSGFRA	&ILPREFA	IOA ISPF Message library (French)	Y	
ISMSGGER	&ILPREFA	IOA ISPF Message library (German)	Y	
JCL	&ILPREFA	IOA JCL library	Y	
KSL	&ILPREFA	IOA KSL scripts library	Y	
LOAD	&ILPREFA	IOA Load library	Y	
MAC	&ILPREFA	IOA Macro library	Y	
MSGENG	&ILPREFA	IOA Message, Screen, and Help Screen library (English)	Y	
MSGFRA	&ILPREFA	IOA Message, Screen, and Help Screen library (French)	Y	
MSGGER	&ILPREFA	IOA Message, Screen, and Help Screen library (German)	Y	
MSGJPN	&ILPREFA	IOA Message, Screen, and Help Screen library (Japanese)	Y	
PANELENG	&ILPREFA	IOA ISPF Panel library (English)	Y	
PANELFRA	&ILPREFA	IOA ISPF Panel library (French)	Y	
PANELGER	&ILPREFA	IOA ISPF Panel library (German)	Y	
PANELJPN	&ILPREFA	IOA ISPF Panel library (Japanese)	Y	
PARM	&ILPREFA	IOA Parameter library	Y	
PROCIJCL	&ILPREFA	IOA Started Tasks library	Y	
PROCLIB	&ILPREFA	IOA JCL Procedure library	Y	
ROSLIB	&ILPREFA	IOA ROSCOE RPFs and Panel library	Y	
SAMPLE	&ILPREFA	IOA library	Y	
SAMPREPS	&ILPREFA	IOA Reports library	Y	
SAMPEXIT	&ILPREFA	User exits and samples	Y	
SECSRC	&ILPREFA	Security exits and samples	Y	
SIML	&ILPREFA	IOA Simulation Load library	Y	
SSAROMOD	&ILPREFA	SAS/C Resident library	Y	

**Table 37 IOA operations libraries**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
BANNERS	&OLPREFA	IOA Banner library		Y
CAL	&OLPREFA	IOA Calendar library		Y
M2G	&OLPREFA	Shout message communication file for Shout messages from CONTROL-M (and other IOA products) to CONTROL-M/Enterprise Manager		Y
PROF	&OLPREFA	IOA Profile library		Y

**Table 38 IOA repository**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
COLD	&DBPREFA	IOA Global Variables Columns file (Data component)		Y
COLI	&DBPREFA	IOA Global Variables Columns file (Index component)		Y
DBSD	&DBPREFA	IOA Global Variables Database file (Data component)		Y
DBSI	&DBPREFA	IOA Global Variables Database file (Index component)		Y
LOG	&DBPREFA	IOA Log		Y
NRS	&DBPREFA	IOA Manual Conditions file		Y
NSN	&DBPREFA	IOA Manual Conditions Synchronization file		Y
CND	&DBPREFA	IOA Conditions file		Y
ALTCND	&DBPREFA	IOA Mirror (Dual) Conditions file (Optional)		Y
VARD	&DBPREFA	IOA Global Variables Vars file (Data component)		Y
VARI	&DBPREFA	IOA Global Variables Vars file (Index component)		Y

**Table 39 IOA maintenance files**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
MAINTLIB	&ILPREFA	IOA Maintenance library	Y	

# SMP/E data sets

**Table 40 SMP/E data sets (part 1 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
ACICSSAM	&SPDPREF	IOA CICS Distribution library	Y	
ACLIST	&SPDPREF	IOA CLIST Distribution library	Y	
ADOC	&SPDPREF	IOA Documentation Member Distribution library	Y	
AGENERAL	&SPDPREF	IOA General (Miscellaneous) Distribution library – fixed length record (80)	Y	
AGENERLV	&SPDPREF	IOA General (Miscellaneous) Distribution library – variable length record	Y	
AGNRL132	&SPDPREF	IOA General (Miscellaneous) Distribution library – fixed length record (132)	Y	
AINSTALL	&SPDPREF	IOA Installation Distribution library	Y	
AINSTCTB	&SPDPREF	CONTROL-M/ Analyzer Installation Distribution library	Y	
AINSTCTD	&SPDPREF	CONTROL-D Installation Distribution library	Y	
AINSTCTM	&SPDPREF	CONTROL-M Installation Distribution library	Y	
AINSTCTO	&SPDPREF	CONTROL-O Installation Distribution library	Y	
AINSTCTR	&SPDPREF	CONTROL-M/Restart Installation Distribution library	Y	
AINSTCTT	&SPDPREF	CONTROL-M/Tape Installation Distribution library	Y	
AINSTCTV	&SPDPREF	CONTROL-V Installation Distribution library	Y	
AIOALOAD	&SPDPREF	IOA Distribution Load library	Y	
AISMSGEN	&SPDPREF	IOA ISPF Message Distribution library (English)	Y	
AISMSGFR	&SPDPREF	IOA ISPF Message Distribution library (French)	Y	
AISMSGGE	&SPDPREF	IOA ISPF Message Distribution library (German)	Y	
AISMSGJP	&SPDPREF	IOA ISPF Message Distribution library (Japanese)	Y	
AKSL	&SPDPREF	IOA KSL Distribution library	Y	
AMAC	&SPDPREF	Macro library	Y	

**Table 40 SMP/E data sets (part 2 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
AMSGENG	&SPDPREF	IOA Message, Screen, and Help Screen Distribution library (English)	Y	
AMSGFRA	&SPDPREF	IOA Message, Screen, and Help Screen Distribution library (French)	Y	
AMSGGER	&SPDPREF	IOA Message, Screen, and Help Screen Distribution library (German)	Y	
AMSGJPN	&SPDPREF	IOA Message, Screen, and Help Screen Distribution library (Japanese)	Y	
APANELEN	&SPDPREF	IOA ISPF Panel Distribution library (English)	Y	
APANELFR	&SPDPREF	IOA ISPF Panel Distribution library (French)	Y	
APANELGE	&SPDPREF	IOA ISPF Panel Distribution library (German)	Y	
APROCJCL	&SPDPREF	IOA Started Tasks Distribution library	Y	
APROCLIB	&SPDPREF	IOA JCL Procedure Distribution library	Y	
AROSLB	&SPDPREF	IOA ROSCOE RPFs Distribution library	Y	
ASAMPEXT	&SPDPREF	IOA User Exits Distribution library	Y	
ASAMPLE	&SPDPREF	IOA Distribution library	Y	
ASAMPREP	&SPDPREF	IOA Reports Distribution library	Y	
ASECSRC	&SPDPREF	IOA Security Exits Distribution library	Y	
CSI	&SPCPREF	IOA SMP/E database	Y	
SMPLOG	&SPAPREF	SMP/E Log file	Y	
SMPLOGA	&SPAPREF	SMP/E Alternate Log file	Y	
SMPLTS	&SPAPREF	Linkage Temporary Store	Y	
SMPMTS	&SPAPREF	Macro Temporary Store	Y	
SMPPTS	&SPAPREF	PTF Temporary Store	Y	
SMPSCDS	&SPAPREF	Save Control Data Set	Y	
SMPSTS	&SPAPREF	Source Temporary Store	Y	

# CONTROL-M libraries and files

**Table 41 CONTROL-M installation libraries**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
JCL	&ILPREFM	CONTROL-M JCL library	Y	

**Table 42 CONTROL-M operations libraries and files**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
COMMCNTL	&OLPREFM	NJE Tracker library		Y
JCLPROMP	&OLPREFM	CONTROL-M Master JCL library (of the Parameter Prompting facility – Type 2)		Y
JOBLIST	&OLPREFM	Communication file		Y
LOADGTW	&OLPREFM	CONTROL-M NJE Tracker Load library		Y
PARM	&OLPREFM	CONTROL-M Parameters library		Y
PLANMSTR	&OLPREFM	CONTROL-M Master Prompting Plans library (of the Parameter Prompting facility – Type 2)		Y
PROMPT	&OLPREFM	CONTROL-M Prompting Tables library (of the Parameter Prompting facility – Type 1)		Y
SCHEDULE	&OLPREFM	CONTROL-M Scheduling Tables library		Y

**Table 43 CONTROL-M repository files (part 1 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
ALTCKP	&DBPREFM	CONTROL-M Mirror (Dual) Active Jobs file		Y
BKP	&DBPREFM	CONTROL-M Active Jobs file – backup		Y
CKP	&DBPREFM	CONTROL-M Active Jobs file		Y
CKPJNL	&DBPREFM	CONTROL-M AJF for Journaling Synchronization		Y
CNDJNL	&DBPREFM &DBTAILA (security)	Condition File for Journaling Synchronization		Y
CTM2SBS	&DBPREFM	CONTROL-M to CMEM Communication file		Y

**Table 43 CONTROL-M repository files (part 2 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
GRF	&DBPREFM	CONTROL-M Job Dependencies file		Y
HST	&DBPREFM	CONTROL-M History file		Y
JNL	&DBPREFM	CONTROL-M Journaling file		Y
RES	&DBPREFM	CONTROL-M Resources file		Y
SBS2CTM	&DBPREFM	CMEM to CONTROL-M Communication file		Y
STATFILE	&DBPREFM	CONTROL-M Job Execution Statistics file		Y

## CONTROL-M/Restart libraries and files

**Table 44 CONTROL-M/Restart Operations Libraries and Files**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
PARM	&OLPREFR	The Restart Parameters library of CONTROL-M/Restart		Y

## CONTROL-D libraries and files

**Table 45 CONTROL-D Installation Libraries**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
JCL	&ILPREFD	CONTROL-D JCL library	Y	
SKL	&ILPREFD	CONTROL-D Backup/Restore Job skeletons	Y	

**Table 46 CONTROL-D operations libraries and files (part 1 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
ACIFPARM	&OLPREFD	ACIF Parameters library		Y
APAPARM	&OLPREFD	CONTROL-D APA Parameters library		Y
BKPMIS	&OLPREFD	CONTROL-D Backup Missions definitions		Y
CCIFPARM	&OLPREFD	CCIF Parameters library		Y

**Table 46 CONTROL-D operations libraries and files (part 2 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
DJDEPARM	&OLPREFD	CONTROL-D XEROX (DJDE) Parameters library		Y
DSNLIST	&OLPREFD	CONTROL-D Print Plan Communications List file		Y
JOB	&OLPREFD	CONTROL-D Backup/Restore Jobs library		Y
OUTPARMS	&OLPREFD	CONTROL-D Sysout Parameters library		Y
PARM	&OLPREFD	CONTROL-D Parameters library		Y
PRTMIS	&OLPREFD	CONTROL-D Print Missions definitions		Y
REPORTS	&OLPREFD	CONTROL-D Report Decollating definitions library		Y
RSTMIS	&OLPREFD	CONTROL-D Restore Missions definitions library		Y
SCRLIST	&OLPREFD	CONTROL-D CTDDLRP Communication List file		Y

**Table 47 CONTROL-D repository files (part 1 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
ACT	&DBPREFD	Data Component of CONTROL-D Active User file		Y
ACTI	&DBPREFD	Index Component of CONTROL-D Active User file		Y
AMB	&DBPREFD	CONTROL-D Active Missions file – backup		Y
AMF	&DBPREFD	CONTROL-D Active Missions file		Y
ATB	&DBPREFD	CONTROL-D Active Transfer file – backup		Y
ATF	&DBPREFD	CONTROL-D Active Transfer file		Y
COM	&DBPREFD	CONTROL-D Communication file		Y
GIR	&DBPREFD	Data Component of CONTROL-V Global Index file.		Y
GIRI	&DBPREFD	Index Component of CONTROL-V Global Index file.		Y
HST	&DBPREFD	Data Component of CONTROL-D History User file		Y
HSTI	&DBPREFD	Index Component of CONTROL-D History User file		Y



**Table 47 CONTROL-D repository files (part 2 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
MIG	&DBPREFD	Data Component of CONTROL-V Migrate User Report file		Y
MIGI	&DBPREFD	Index Component of CONTROL-V Migrate User Report file		Y
PGC	&DBPREFD	CONTROL-D Page Counter file		Y
PRM	&DBPREFD	Data Component of CONTROL-D Permanent User file		Y
PRMI	&DBPREFD	Index Component of CONTROL-D Permanent User file		Y

## CONTROL-O libraries and files

**Table 48 CONTROL-O Installation Libraries**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
JCL	&ILPREFO	CONTROL-O JCL library	Y	

**Table 49 CONTROL-O operations libraries and files**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
ALO	&OLPREFO	Automation Log file		Y
GLB	&OLPREFO	Global Variables library		Y
PARM	&OLPREFO	CONTROL-O Parameters library		Y
RULES	&OLPREFO	CONTROL-O Rules library (contains rules)		Y
SOLVKOA	&OLPREFO	SolveWare KOA Script library		Y
SOLVJCL	&OLPREFO	SolveWare JCL library		Y
SOLVRULE	&OLPREFO	SolveWare Rules library		Y
SOLVSCHD	&OLPREFO	SolveWare Schedule library		Y

**Table 50 CONTROL-O repository files**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
STATFILE	DBPREFO	Statistics file		Y

## CONTROL-V libraries

Table 51 CONTROL-V operations libraries

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
MIGMIS	&OLPREFV	CONTROL-V Migration Missions Definition library		Y

## CONTROL-M/Analyzer libraries and files

Table 52 CONTROL-M/Analyzer installation libraries

Type	JCL prefix parameter	Description	Primary Production Environment Upgrade cleanup	Pilot Environment Upgrade cleanup
JCL	&ILPREFB	CONTROL-M/ Analyzer JCL library	Y	

Table 53 CONTROL-M/Analyzer operations libraries

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
PARM	&OLPREFB	CONTROL-M/ Analyzer parameters library		Y
RULES	&OLPREFB	CONTROL-M/ Analyzer rules library (contains rules)		Y
BALMIS	&OLPREFB	CONTROL-M/ Analyzer balancing missions library		Y
SOLVJCL	&OLPREFB	SOLVWARE JCL library		Y
SOLVRULE	&OLPREFB	SOLVWARE rule library		Y

Table 54 CONTROL-M/Analyzer repository files (part 1 of 2)

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
ABF	&DBPREFB	Active Balancing file		Y
ABFBKP	&DBPREFB	Active Balancing file – backup		Y
GRPD	&DBPREFB	Group file		Y
GRPI	&DBPREFB	Index file		Y
JAFD	&DBPREFB	Rule Activity file		Y
JAFI	&DBPREFB	Index file		Y
MOD	&DBPREFB	Model Variables Definition file		Y

**Table 54 CONTROL-M/Analyzer repository files (part 2 of 2)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
REPD	&DBPREFB	Report file		Y
REPI	&DBPREFB	Index file		Y
VARD	&DBPREFB	Variables Generations file		Y
VARI	&DBPREFB	Index file		Y

## CONTROL-M/Tape libraries and files

**Table 55 CONTROL-M/Tape installation libraries**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
JCL	&ILPREFT	CONTROL-M/Tape JCL library	Y	

**Table 56 CONTROL-M/Tape operations libraries and files**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
DOC	&OLPREFT	CONTROL-M/Tape Rule Documentation library	Y	
PARM	&OLPREFT	CONTROL-M/Tape Parameter library	Y	
RULES	&OLPREFT	CONTROL-M/Tape Rule library (contains rules)	Y	
RTMDELL	&OLPREFT	CONTROL-M/Tape CTTRTM Deletion list	Y	
VTMREPD	&OLPREFT	CONTROL-M/Tape CTTVTM Report data	Y	
RTMRPD	&OLPREFT	CONTROL-M/Tape CTTRTM Report data	Y	
FMLOG	&OLPREFT	IOA monitor checkpoint file	Y	
REPDATA	&OLPREFT	CONTROL-M/Tape CTTSPLE Extract file	Y	
		<b>Note:</b> BMC Software recommends that you enlarge the REPDATA file if you plan to use utilities CTTSPLE and CTTMER to transfer a large number of Media Database records		

**Table 57    CONTROL-M/Tape database (repository)**

Type	JCL prefix parameter	Description	Primary Production Environment files	Pilot Environment files
MDBD	&DBPREFT	CONTROL-M/Tape Media Database Data file	Y	
MDBI	&DBPREFT	CONTROL-M/Tape Media Database Index file	Y	
STKD	&DBPREFT	CONTROL-M/Tape Stacking Statistics Data file	Y	
STKI	&DBPREFT	CONTROL-M/Tape Stacking Statistics Index file	Y	
TRC	&DBPREFT	CONTROL-M/Tape Trace file	Y	

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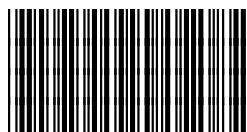
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